

*The* **COMPUTER PAPER**  
NEWS      REVIEWS      FEATURES

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# FRIENDLYWARE COMPUTERS INC

3003 Kingsway (at Rupert) Vancouver V6B 5A5 487-3112

## COMPUTER SPECIALS

### ALT. PC/XT SPECIAL

- 1000MHz 386 15 MB RAM/20MB
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### COSTLY HARDWARE

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### COREL CD-ROM BLOCKBUSTER

- 1000MHz 386 15 MB RAM/20MB
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### SOME OF OUR MAGAZINES

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## NOTEBOOK COMPUTERS

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## PORTABLE PRINTERS

- 1000MHz 386 15 MB RAM/20MB
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## STYLING UNDER-LAPTOP PRINTER

- 1000MHz 386 15 MB RAM/20MB
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## SOME OF OUR MOST RECENT BOOKS

- 1000MHz 386 15 MB RAM/20MB
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## CRIMINAL RECORDS, INTERVIEW & INTERVIEW

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## NOVELL DISKLESS 3 USER SYSTEM \$4728



Novell Network 3.2

386 File Server



236 12MHz



236 12MHz



NOVELL

No. of Workstations	Novell Technology Desktop Unit	Novell Technology Desktop Unit	No. of Workstations	Novell Technology Desktop Unit	Novell Technology Desktop Unit
2	\$2,100.00	\$1,050.00	20	\$20,700.00	\$10,350.00
3	\$2,400.00	\$1,200.00	30	\$24,000.00	\$12,000.00
4	\$2,600.00	\$1,300.00	40	\$26,000.00	\$13,000.00
5	\$2,800.00	\$1,400.00	50	\$28,000.00	\$14,000.00
6	\$3,000.00	\$1,500.00	60	\$30,000.00	\$15,000.00
7	\$3,200.00	\$1,600.00	70	\$32,000.00	\$16,000.00
8	\$3,400.00	\$1,700.00	80	\$34,000.00	\$17,000.00
9	\$3,600.00	\$1,800.00	90	\$36,000.00	\$18,000.00
10	\$3,800.00	\$1,900.00	100	\$38,000.00	\$19,000.00
11	\$4,000.00	\$2,000.00	110	\$40,000.00	\$20,000.00
12	\$4,200.00	\$2,100.00	120	\$42,000.00	\$21,000.00
13	\$4,400.00	\$2,200.00	130	\$44,000.00	\$22,000.00
14	\$4,600.00	\$2,300.00	140	\$46,000.00	\$23,000.00
15	\$4,800.00	\$2,400.00	150	\$48,000.00	\$24,000.00
16	\$5,000.00	\$2,500.00	160	\$50,000.00	\$25,000.00
17	\$5,200.00	\$2,600.00	170	\$52,000.00	\$26,000.00
18	\$5,400.00	\$2,700.00	180	\$54,000.00	\$27,000.00
19	\$5,600.00	\$2,800.00	190	\$56,000.00	\$28,000.00
20	\$5,800.00	\$2,900.00	200	\$58,000.00	\$29,000.00
21	\$6,000.00	\$3,000.00	210	\$60,000.00	\$30,000.00
22	\$6,200.00	\$3,100.00	220	\$62,000.00	\$31,000.00
23	\$6,400.00	\$3,200.00	230	\$64,000.00	\$32,000.00
24	\$6,600.00	\$3,300.00	240	\$66,000.00	\$33,000.00
25	\$6,800.00	\$3,400.00	250	\$68,000.00	\$34,000.00
26	\$7,000.00	\$3,500.00	260	\$70,000.00	\$35,000.00
27	\$7,200.00	\$3,600.00	270	\$72,000.00	\$36,000.00
28	\$7,400.00	\$3,700.00	280	\$74,000.00	\$37,000.00
29	\$7,600.00	\$3,800.00	290	\$76,000.00	\$38,000.00
30	\$7,800.00	\$3,900.00	300	\$78,000.00	\$39,000.00

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MT286/12

\$1280

MT386SX/25

\$1439

MT386/25

\$1580

MT386/33C

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MT486/33DX

MT486/33 EISA

MT486/33EISA Intel

4MB 128K Cache

4MB 256K Cache

4MB 256K Cache

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\$3779

\$4299

Corporate MULTITERM users:

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All MULTITERM and MULTIMAX workstations are made by Gordin Computers of the U.S.A.

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FREE users want  
with the purchase of  
3 units + maintenance  
Corporate system

All IBM, ITT/IBM Computers come with • 60MB 10MB video card 1MB RAM • 1MB RAM (4MB for MT486) • 2 parallel, 1 parallel, 1 gameport • VGA or VGA 256K 1K VGA color w/1MB VGA card • 101 separate Alps clock/keyboards • 1 floppy drive of choice • clock &amp; calendar • MS-DOS 5.0 • Warranty - 3 years labour, 2 years parts, 1 year parts &amp; labour on monitor

Prices subject to change without notice

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BW286/12

\$1075

BW386SX/20

\$1228

BW386/25

\$1337

BW386/33

\$1449

BW486/33

\$2093

BW486/33EISA

\$2898

4MB 64K Cache

4MB 64K Cache

Upgrades:

Additional 1MB 270 - Extra floppy \$90

MS-DOS 5.0 Non-extended monitor with 1600K VGA Card \$149

128MB 1280 200MB 1440

300MB 200K 1012, 600MB 200K 1012

9999 Scanline 2400 Fax Modem, USA made, \$199

All BYTEWELL Computers come with • 60MB 10MB hard disk • 1MB RAM (4MB for BW486) • 2 serial, 1 parallel, 1 gameport • VGA or VGA 256K 1K VGA color w/1MB VGA card • 1 floppy drive of choice • clock &amp; calendar • Warranty - 3 years labour, 1 years parts, 1 year parts &amp; labour on monitor

### SOFTWARE SPECIAL

ACCPAC/OLYMPIA.....\$659

ACCPAC Payroll.....\$788

ACCPAC/Manager.....\$259

Corel Draw 2.0 .....\$485

FoxPro v.2.0 .....\$599

Lotus 123 v.3.1.....\$465

Windows 3.0 .....\$109

Word Perfect 5.1 .....\$299

Word Perfect for Windows .....\$309

# DPE COMPUTERS

(Since 1983)

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# From the Editor

# Contents

U.S. Edition • March 1992

## High-speed Modems

**H**igh-speed modems became very much an issue for us this month with the launching of our new Toronto office. We are attempting to utilize some of the high technology to create a faster version of what The CMR and Macworld magazine editors writing up. We picked two separate versions of The Computer Paper in two major markets in Canada, to high-speed modems because high is our last of expectations and hopefully twenty-something to buy. Depending on which side our dedicated staff spend out over three thousand miles of broken roads is a top priority.

We have had our ups and downs with modem service. We first an extremely small space which we then immediately in some people in our house to allow us to log on and pick up whatever messages as well as typical mail, documents, graphics and database files. For about six months I was working wonderfully well, then we received no signals and couldn't get it to work for another six months. This seriously got fixed by another upgrade, but

modem service had never got our office, making the plan in the process and changed to us up our modem line without the ability to access incoming lines. This created quite a bit of local scrambling. The computer made us and have caused a major loss of time in the information and even questioned the telephone system. (This threat is passed up still.) Luckily, it is a blessing that, we hoped, also the collective consciousness that have all the answers to these mysteries and get our telephone service back on the phone. We walked so through reprogramming the telephone system. (If you thought computers were better, try playing with a telephone key system over there.)

The release of traffic we expect from our Toronto office brought up the issue of high-speed modems. We purchased a pair of them based on good preliminary results with high-speed service in Ottawa (where we pick up Monday). We shipped and shipped between sending them to New York as well as to the Toronto office in the weekend of a new set in information. Then George Vincent was working around in the Montreal area of Ottawa and concluded on the wonderful article by Francis Chen. His reactions and thorough conclusions made considerable light on this whole issue.

We believe now in that the modems will still be there, but they are again the best in the world for those willing to take the "Saturday night" in it. (Well, I could tell you that we had a lot of interest, but in price, time, it is still in process. For remote, or cheap, or quick.)

## Home & Education Computer Expo

From March 1st, the B.C. Computer Expo on the old Expo site in Vancouver, will be the site of the Home & Education Computer Expo, a new computer show for Vancouver. The organizers George Smith, editor-in-chief regularly prints these pages, will be the first to see the show when he has called the previous "best kind of computer show" I got the very last. According to George, he felt confident in this question answered affirmatively and he began the show will allow that answer. We look forward to it and hope to see you there.

Enjoy the Issue

Steven Singh (Editor)  
Publishers/Editors

## Editorial Schedule

Issue	Topics	Cover	Current Ready	Distributions
Apr '92	Online Publishing - Continued Personal Information Managers	Mar '92	Mar '92	Apr '92
May '92	Windows & OS/2 ROM Software for Information	Apr '92	Apr '92	May '92
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# What's New

First Looks at New Products and Services

## AME Link connects SORC's I-DEAS to AutoCAD

Amesoft's Canada has announced AME Link, a new software package that lets AutoCAD customers transfer AutoCAD/AME, solid-modelling information to Intergraph's Research Corporation's I-DEAS software. Amesoft claims that the benefits for mechanical engineers and designers of using the two companies' integrated set of technology-building products are more efficiency and more control over the design/development process.

As a first step, Advanced Modelling Extension (AME) is the solid-modelling module for AutoCAD that used to develop solid models of components design. AME Link transfers the geometry to I-DEAS—SORC's topology design product—where it can be further developed, tested and modified.

AME Link runs on 386- and 486-based PCs from IBM, Compaq or 1602-compatible running DOS 3.1 or higher. The product also runs on SPARCpilot, SPARCstation and ULTRIX. AME Link, AutoCAD and the Advanced Modelling Extension are available in Canada through a select group of SOLID Alliance members and all authorized AutoCAD dealers. The suggested retail price of AME Link is \$1,000.

Call 1-800-445-0070 for the latest details.

## Sun and EMCON of Ottawa sign partnership

U.S. graphics workstation giant Sun Microsystems and EMCON Ltd. of Ottawa (Canadian Control Systems) have signed a major partnership agreement, under which EMCON will develop the VLSI/EMCON/STARCAD III CAD workstation for Sun Microsystems customers worldwide. EMCON claims to be the largest Canadian private sector source of VLSI/EMCON technology.

The agreement is part of a Canadian "modernization" program to give Microsystems of Canada, under which Sun continuously receives supplies as provided conditions to supply that "worldwide network."

## HP marks 20th anniversary of its first handheld calculator

Hewlett-Packard (Canada) Ltd. recently marked the 20th anniversary of the HP 9C, the HP's first handheld calculator product, which became known as "the electronic slide rule."

During the early 1970s, William H. Hewlett, HP's co-founder, was inspired by handheld calculators. While working with HP engineers, Hewlett became convinced that HP could create the technology for a new pocket-size calculator capable of performing trigonometric, logarithmic and exponential functions. The result was the introduction of the 9 c. HP 9C on Jan. 14, 1972. It sold for \$299 (U.S. list) and exceeded all sales expectations—more than 200,000 units in three years.

Hewlett-Packard (Canada) Ltd. was established in 1961. The company now employs 1,200 people in 17 offices across Canada. The company designs and manufactures products for the world market in three facilities in Canada: Precision Automation Division, in Waterloo, Ontario, makes instruments and data acquisition terminals and control systems; STARCAD Technologies Division in Edmonton, Alberta, produces specialized

high-performance process control solutions for designers, engineers and operators of steel manufacturing facilities. The Calgary Product Development Center makes software for oil and gas, telecommunications and hydro applications. The company had revenue of \$445 million in its 1991 fiscal year.

## Compaq announces new low-powered notebook PCs

Compaq is looking to regain its leadership in the notebook, portable computer market with the launch of two lightweight systems based on the low-power Intel 486SX processor. Known as the Compaq LTE Lite/15 and Compaq LTE Lite/20, these two new notebooks use new power conservation features to provide users with longer-lasting battery life alongside high-performance storage and a lightweight on-board design.

The company also introduced two key notebook PC options: a new advanced desktop expansion bus and an enhanced 9400-lpm (normal) data modem.



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### Program to help software developers launch product

The Information Technology Association of Canada (ITAC)—through its regional offices (ITAC BC, formerly Software BC) and with assistance from Western Economic Development—has sponsored the release of its seminar/consulting program for software developers. It's called *Marketing Your Software: A Practical Year Through the Product Launch Process*.

The seminar claims that program is unique because over the course of a developer can actually launch their own product. Computer (ITAC) is the national association representing the information or technology industry including software developers and publishers. The seminar/consulting program is one of the most ITAC BC has in its offering the need to upgrade marketing skills within BC's software community.

The program is made up of six seminar sessions. All seminar leaders are software industry specialists. Each session is then followed by a personal one-on-one consulting session. Some of the topics planned for the program include: Marketing, Product Line Development, Product and Corporate Identification, Production of Professional Materials, Distribution—Channel and Management, Direct Mail and Advertising.

Seminars are scheduled to commence in the BC Club on Tuesday, March 24th and will be held every second Tuesday until June 1, 1992. ITAC BC members get a 75% discount.

For a complete brochure or more information contact: ITAC BC, 204-666-0000.

### QMS announces 17 ppm, 600 dpi multi-network printer



Shown is the QMS-17170, the first laser printer company directly to enter Ethernet or Token Ring (IEEE802.3) networks where there's a special network card or interface. Ethernet supports token IEEE802.3, 10/40/160, or Token Ring protocols.

The Token Ring interface card supports NetWare also. Up to ten desktop-only token interfaces include the standard RS-1585, Converter, Parallel, and LocalTalk using the optional interface.

The QMS-17170 uses what the company calls "Modular technology"—also allows user selection of 600 x 600 dpi or 300 x 300 dpi mode. It is powered by an Intel 386/333 CPU/3.5 MB RAM/4-megabyte processor. A not inconsiderable 3 lbs of RAM is included and is expandable to 16 MB memory-on-chip RAM.

The QMS-17170 also includes an optional timing processor (called what else but EXPT), designed to automatically select the appropriate print language on any interface. Available interface languages include Apple's Postscript software, HP PCL 3C, and HP-GL/2 Post languages.

The 17 ppm Canon SX engine (Canon 1000series laser engine) and a 50,000 page per month duty cycle. It supports up to 600 x 600 dpi, 60 x 48 in. landscape, transparencies, and label stock. An optional duplexing (two-side) unit and power envelope (body) are also available.

The Canadian supply of the price for the QMS-17170 is \$10,000. Options and supply to include the following: Standard Ethernet, EtherLink Ethernet, TOP-OF-Business, 3000C Ethernet, duplexing, power envelope (body) 4 MB 386/33, 1 MB 386/40, interface (body) cover, carriage, additional paper tray.

The printer is distributed in Canada through QMS Canada Inc. direct sales. The printer offers a two-year warranty and is supported in Canada by QMS Canada Inc. National Service, which offers a variety of on-site design, and repair-and-replace plans located by fully-trained QMS service technicians.

For more details, contact QMS Canada, 2000 West Beaver Creek, 100 level (Canada) 905-709-4400 or 1-800-363-1000 in the USA.

### IBM Canada to sponsor Science Centre Exhibit

IBM Canada announced last month corporate sponsorship of a new exhibit in the Science Centre (Vancouver) that combines Spectroscopy with learning.

IBM has sponsored the Challenge Learning Centre, a new permanent exhibit hall which opens in March. IBM has been involved with the IBM Spectro program since the early 1980s, providing computer hardware and software systems to the ground and in spacecraft for every US manned spaceflight program since Gemini.

In Toronto, IBM Canada's Software Development Laboratory has won World

responsibility for the design and development of relational database software for large computer systems and mainframes.

Software development is used for space shuttle processing includes from the start the entire shuttle until its own scheduled launch. The software helps find the most efficient—including about 100,000 work instructions used in the development program for the shuttle launch.

The laboratory, located across the street from the Ontario Science Centre, employs 1200 people and IBM Canada is the third largest private sector IBM centre in Canada.

### QDT announces new printer package for Mac

Macintosh-based QDT Software has launched PowerPrint, a new QuickDraw printer driver package for the Apple Macintosh. PowerPrint is a collection of software printer drivers along with a utility which enables Macintoshes to print to most dot-matrix printers.

PowerPrint is an updated version of QDT's popular printer driver package, JetLink. Support and Productive Collection. It includes drivers for Canon BubbleJet and LaserJet, Epson PL and LQ series, Hewlett-Packard DeskJet, LaserJet and ThinkJet, Xerox Phaser, and Xerox P series printers.

The PowerPrint package includes a compact, high-speed, and a user-friendly printer driver. A distinguishing feature of the new software code is that it does not require an external power adapter, allowing for easy portable printing from PowerBooks or portable personal laptop systems into the desktop from QDT. In addition to being System 7



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## Your Home Office: A Write-Off?

by Gordon Frang

Times You're Taxman,  
And you're writing for us and for me."  
—Thomas, The Double, December 1989

I intend to give you good news. I wanted to tell you that you could save money on your taxes this year.

Our recent reader survey revealed that about a quarter of you have home offices. It's growing (most likely for people to do some of their work on computers at home). Telecommuting is becoming a more viable

and flexible home office to allow you a more efficient transfer—in replacing the daily grind of commuting to and from.

I know self-employed people like me could deduct costs of a home computer office from their income taxes. I thought that people who work for someone else—90 per cent of the work force—should be able to as well.

Home tax, but not money. Revenue Canada's rules on deducting home office

expenses improved for tax year 1990—but are still far from ideal.

### The Employer's Certification Form (T1200)

Getting this form filled out is the first step towards your claim allowance. Your employer must complete and fill in part of the form for you.

How can you make sure clearly state on the form that:

- 1) The home space is your principal place of employment, AND/OR
- 2) You use the home space regularly and continuously to store people related to your employment. AND the space is not used for exclusive home office use.

Many employees may find it difficult to have their employer certify that space is for regular work place—working at home does take out of line in a work week might justify this condition. Also, the second condition may be difficult to meet if the employee does not have as much staff people in the home part of the job.

The next issue may relate more to the employer. The family TV room cannot be the office during the day. This is the concept of "exclusive space" is required. A room half-way is not sufficient for meeting the rule.

These rules parallel those for self-employed taxpayers claiming home office expenses.

If you can't meet these rules, you're probably not at work. You won't get a penny off your income tax. The cost of having a home office so you can do your job is just another tax on your working hours.

### Count the Cost

If you do manage to satisfy the rules you may deduct the cost of your office. There are usually calculated as a percentage of the total cost of the home. The most common way to do this is on a separate-lease basis, or by the number of rooms.

Calculate the square footage or room, the rooms of the "deductible space" of your home office. Divide this by the total square footage of the normal living space of your home, multiplying the percentage.

What costs can include this, electricity, heating, water, repairs, etc. If you have your home you may not all the monthly costs. If you rent your home, you may not include mortgage interest, property taxes, but not insurance and depreciation. Monthly, you may not include an imputed cost on your home.

The new rules say that the home office expenses cannot exceed your total tax liability, for the year. If they do, the excess can be carried forward, indefinitely, applying against future employment income.

### Out of Luck Again

As a taxpayer employee you can't deduct a share of the cost of your computer or other office equipment, whether rented, owned or leased. This is harsh. Rental value of used computers drops drastically—this is a cost you need pay the tax, right?

Communicated until employees can get back—step on their office equipment, breaking costs.

### Don't Call This a Loophole, But...

If you do manage to meet all employee work using your home office, you may be able to deduct a minor range of costs. It's probably not better for the 1990 tax year, but it might be a plan for the future.

It is also possible to deduct a cost of a small work computer to do the work at home on a contract basis. You could further consider depreciating your equipment and deducting home expenses from your annual personal income. This might produce a surplus. It is a reward for people working their own business to carry a net loss for the first couple of years.

If a person really couldn't be able to get away with this for more than a couple of years—then they could be the more your own computer depreciates the more rapidly. On a 1990 tax year, this could easily save \$400 on your total tax over two years.

### The Goods and Services Tax

The GST means that you can now deduct the full cost of allowable expenses—including GST. Currently, they are deducting GST-related tax and claim a 5% rebate of these expenses at the rate of 1/19th. This rebate will be claimed on the personal income tax return.

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In fact, an American study conducted in 1990 shows that most people, when confronted with a digital time display, now look at it for five times as long—and then sighs when the watch hands would look like—well, it makes no sense. In other words, 09:14:15 means (Mickey's) time. And it's not like it's like time is an...

For their reason, digital watches and speedometers aren't as popular as their analog counterparts, or are often combined with the traditional dial display that most of us are used to. General Motors' new watches, manufacturers, however, have merged the digital and analog technologies to produce displays with digital accuracy and "analog" faces. These hybrids combine computerized electronics and quartz accuracy, but display the hours using LCD (Liquid Crystal Display) technology. Now that's thinking. After all, why re-invent the wheel just to make it smoother.

Age Group	Total (%)	Male (%)	Female (%)
18-24	15	10	20
25-34	25	20	30
35-44	35	30	40
45-54	45	40	50
55-64	55	50	60
65+	65	60	70

the latest Chevrolet Corvair sports over 100 new parts with types of displays. Adults: 10 cents.

**References**

It's things like growing faster. Evaluating, assessing and testing, not considering the human perspective when building our machines. As early as 1948, the term "ergonomics" was coined to refer to this applied science, but only in the last ten years or so has it become polished as a design philosophy. In fact, today's computers have been so over-engineered that the hardware and software created this way—on call, "non-threshold." Instead of just saying it "works better for people," today's engineers are embracing the philosophy and saying, "now let's make it work better with people."

The use of loans is one example here. MasterCard, and more recently IBM (via Windows), refuse to lend their services to others that violate their acceptable use policies.

remember commands with physical pointers or icons. When given on behind-the-scenes level, it changed the world. It's just that the computer does whatever the actual commands for us, making it unnecessary to memorize them. By comparison to the code-oriented world we once had to deal with, the new system is great. At least this is the way when it comes to commands.

[illegible]

## Symbols Aren't Enough

Clearly we are being conditioned to use and move with an international world wherever technology is involved. Finally, this is the cultural shift that is the global market, and the changes to get around language barriers will involve total international systems. In some cases it works. My brother lives in Africa and he has to be the "elf" because the time that appears on your bill when it expenditures a company's services follow. That is your company's way of saying, "We didn't see it, but we got it." But money and language can speak, the pleasure of a working company on your behalf is to find to get your services.

But isn't this a step further? If computer manufacturers and really learn to making PCs interact with people more effectively, why not incorporate the same approach to child psychologists' coping with youngsters? Was this paradigmatic shift toward space they advocate in the chapter and home environments in their own software development already use this paradigmatic approach to some extent, that meaning "open" you have from your PCs, including one of the greatest success in the

companion's way of maintaining you in front of your co-workers. And it usually works. We rarely see in the most successful of the shared initiatives less commitment than in some failures.

Be vigilant about the second! Well, almost. Microsoft and software giant is clearly HyperCard allow you to customize your computer's a subtle response in your own preference. Why not invest yourself with something you can return to, rather than a cold, "bump" or idle screen? The possibilities are endless here. How about using Ray Charles's voice from the Best Popper commercial? Every time you hit something outside or choose the right B008 command, Ray's voice would scream from your computer? "You got the right one, baby, baby!"

The second theory is, this would give something like

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Then, if we do indeed have the perfect counter to FC, we doubt that the technology used in device 1 will live up to our idealized human standards. Despite quality control, segmentation and artificial intelligence, machines are no exception to fallible human-made devices. [www.ericson.com](http://www.ericson.com)

Do wonder there are sleepers out there just when you think you've got your 10 minutes, you come across a morning like this from the Florida Wildlife View Master. A reluctant person from deep within the cattle galaxy (a common ray, if you will) can, by virtually all back, go crashing through your disk.

It is enough, the media goes and goes. For more that [here](#) is the link to the class. (7)

**Peter Taitel** is an advisor with the City of Calgary on the Data Processing Services Dept., and a business leader for several local magazines. Contact him at 403/243-5983.



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# Technical Talk

## Computerese or Technospeak: It's Still Greek To Me

by Peter Zuber

There's an old joke among computer professionals: If you want to buy an outdated computer, buy the most recent model on the market.

Unfortunately there's no element of irony in this. This is not industry but the climate change and improvement in an old form. But in the process many of us have been deceived by the speed and size by the terminology of the new.

By the time the PC or minicomputer you're using today has made it through the research, development and marketing stages and arrived at the marketplace, you in better places, a buyer and more efficient model to already looking to look for an upgrade. If computers like portable final users were required to study engineering theory, many would be unable by the time they reached the marketplace.

And like the last time, the time around with it evident at a high school pace. According to the National and World Almanacs, there are now more than three-quarters of a million words in the English language. Approximately 500,000 of these are technical terms, and the list is growing at an accelerated rate every day.

### It's All George Lucas's Fault

Well, not really. But consistently successful books, television and movies do have one common element: they use a suitable blend of technology and terminology. At the same time, technical vocabulary increases, as you know our own, and even people with technical computer backgrounds begin to people their first technical terms.

Scientists (and parents) have known for years that it's when we first learn to talk and ask questions about what's going on around us that our vocabulary grows the fastest, only when we become used to a routine does the process slow down.

This is why kids are so quick to pick up on technical terms (and also why many of the best programmers and systems hackers are in their teens). They're simply more receptive to learning. In other words, it's the learning process itself—not when you're learning—other things that prompt progression to add these high-tech terms to their vocabulary as they grow.

### Just Who Invents These Terms, Anyway?

Before it or not, there is some credit due computer manufacturers, no less a national and international level. The COMPTON Group recently changed from Compaq and Compaq, in a document published by the International Telecommunications Union, Geneva, 1978. While you agree on nothing real, the book does contain both some old working documents on terminology and some standard "Yankee domain."

Recently, the International Standards Organization found the related subcommittee published several books on technical terminology including The ISO Vocabulary of Office Machines, and The ISO Vocabulary of Data Processing. The interesting part of these publications is not their explanation of terms, but rather their comments on where computer technology is heading in the near future. And, just in case the way some identified by people such as "TOS" where "T" is a number. These numbers identify ISO subcommittees and indicate that there still is an awareness among committee members as to the final definition of a term or phrase. This is where

terminology ends in "body programable word processing equipment" and "colored ink error-Polish machine type" is born.

In some cases the words and phrases simply find way in the technology become widespread, but in many cases, such as the word "language," we to POWERFUL, COMBINE, and the others in to profound that the term finds its way into our everyday speech, and

ultimately into our daily life.

In a side note, words related for related words have been known as "technical terms" in the past. In the past, in an effort to control in the past only an attempt of their own. However, in words, and the way we use them, that's that. They're just a funny word, we were not in a world to suddenly a reality.



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- MCK-1017X Keyboard

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- 4MB Memory
- IDE AT 1D Combo Card
- 2 S, 1 F, 1 G Ports
- 1.44 MB 3.5" Floppy
- 105MB Hard Drive
- 16 Bit SVGA Video Card
- SVGA Monitor (.28DP)
- MCK-1017X Keyboard

Special  
**\$1530**

#### 386-DX40 System

- Mid-Tower Chassis
- 386-40MHz MM cache MD
- 4MB Memory
- IDE AT 1D Combo Card
- 2 S, 1 F, 1 G Ports
- 1.44 MB 3.5" Floppy
- 105MB Hard Drive
- 16 Bit SVGA Video Card
- SVGA Monitor (.28DP)
- M1 Enhanced Keyboard

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#### 486-DX33 System

- Mid-Tower Chassis
- 486-33MHz Motherboard
- 4MB Memory
- IDE AT 1D Combo Card
- 2 S, 1 F, 1 G Ports
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- SVGA Monitor (.28DP)
- MCK-1017X Keyboard

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- IDE AT 1D Combo Card
- 2 S, 1 F, 1 G Ports
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# Uninterruptible Power Supplies

by Charles Stang

**U**ninterruptible Power Supplies are the high end of power protection. If you really intend quality power all the time, this is the option for you. UPSs are a common part of large mainframe computer systems. If power fails, these big systems have to shut down gracefully without losing data.

The growing size and complexity of microcomputer systems is making UPSs more common. Like most computer technology, UPSs are getting cheaper all the time.

UPSs combine two functions, power conditioning and battery-power backup. Different models and designs do this in different ways.

## Power Conditioning

Power conditioning goes on constantly in a UPS. Battery capacity reduces the computer's input power transient, to smooth the power going to the computer. It smooths steady AC; it's not meant to run on.

They protect against spikes and surges by buffering the incoming power. Some protect against brownouts by rolling down current when voltage drops, then raising the voltage power to house the voltage going to the computer.

## Battery-power Backup

UPSs contain rechargeable batteries. When power fails, these batteries power the computer system. The battery product DC

power, while computers are built to use AC. The battery DC must be converted to AC before being sent to the computer.

## Online and Off-line

The difference goes of UPSs divide roughly in to two classes. In an **online UPS** the batteries power the computer system all the time. The rest of the UPS works to keep the battery charged using incoming AC power. In an **offline UPS** the batteries only die in if the regular supply fails. There is a lag, a "transfer time," before the switch takes place. Before you be scared by this switching process, these experts think **offline UPSs** don't deserve the name "uninterruptible."

They prefer to list them called **standby UPSs** (UPSes).

## UPS Strategies

Most users don't want a UPS that continues to operate after-power fails. For them a UPS is for shutting down the system without losing data, time and otherwise useful of hard under pressure. The idea of a UPS should be matched with the power requirements of a system and the time needed for emergency backup and shutdown.

Political and disaster like powers may not need UPS backup, to depend on how the function. In, for example, a printer may be printing a run of chapters. If the job then shuts down when the power went out, and then is started, a duplicate chapters would be produced. A big enough UPS would not fix the job, though.



Continuing operation is possible if needed. Weights and when that means keep loads of batteries big enough to run the system. Standby protection can keep computer running, but power output from most appliances is crude and rough. It must be passed through a good power conditioner before going to a computer as this can be worse than the disaster.

## LAN's Best Friend

The LAN (Local Area Network) has a level of system complexity sufficient to require backup with a UPS. Since LANs are used by small-to-medium-sized businesses, money is on the line if the LAN crashes.

Because of their complexity LANs are more vulnerable than single-computer to power and surge problems. Even a single LAN can form general backup with its own wiring. This means the disaster must involve all at once a cable.

The value of the data lost in a crash can be more than the cost of the LAN system hardware. The data spent recovering from a crash caused by power failure costs even more in lost production. In the interest of speed, LAN hardware decisions may be forced to include built-in memory. If this goes it's a real disaster.

A UPS can cut out of price of a system to support a LAN is considered small. Since LAN server software can cause power failure, shutting down the system and saving data while the batteries last.

## The Boomerang

There is an option danger from a UPS and better than the power backup to all the Boomerang, by Mike R. Ryan. The DC hardware failure that the inside a computer can still fail you and when power fails.

*Continued on next page*

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**Abstract** *Abstract*

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- Upgradeable Available



Age Group	Total	Male	Female	Male	Female
18-24	100	100	100	100	100
25-34	100	100	100	100	100
35-44	100	100	100	100	100
45-54	100	100	100	100	100
55-64	100	100	100	100	100
65+	100	100	100	100	100

The Hammering acts as no proof that From its British LK, history of power the company for 50 years, making enough to show some without loss of time. It enters the door to the company, expanded and extended right to the last day. It shows this business looking automatically—It needs no further evidence.

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If you already possess a UPS there is a question to consider now. You have to work out your computer system's power demands, then decide how long you want it to keep running if the power fails. This will give you an estimate of the size of UPS you need.

The quality of your power will tell you how important power conditioning is to you. The Third World countries power is so critical to us in Canada, for example.

Money isn't important when choosing a UPS. How long before the batteries that come with the unit wear out and need to be replaced? Batteries can account for 50% of the unit's price, so the buying expense of batteries can be a major cost.

[illegible]

Portable laptop computers combine a rechargeable battery power supply with AC plug-in capacity and come with their own UPS. Batteries are limited by battery life and recharge time. If you know your computer is going to operate in a clean power environment, consider buying a portable

Laplace batteries can be enlarged from fraction-percent power sources like our current hybrids or small portable generators. The stored charge can then produce clean steady power for compact operation. A system of space batteries charging up to a separate charger can power sophisticated equipment.

**Keywords:** child sexual abuse; disclosure; self-blame; social support

laptops built right into a computer are becoming more popular. Mounting them inside the standard case cuts the cost of their housing a part of their own. As more computers are made with the rule of 1/100 in mind, this trend will grow. The hardware is heavy, though, and add some pounds to yours in the weight of the machine.

1844-1845, 1846-1847, 1848-1849, 1850-1851, 1852-1853, 1854-1855, 1856-1857, 1858-1859, 1860-1861, 1862-1863, 1864-1865, 1866-1867, 1868-1869, 1870-1871, 1872-1873, 1874-1875, 1876-1877, 1878-1879, 1880-1881, 1882-1883, 1884-1885, 1886-1887, 1888-1889, 1890-1891, 1892-1893, 1894-1895, 1896-1897, 1898-1899, 1900-1901, 1902-1903, 1904-1905, 1906-1907, 1908-1909, 1910-1911, 1912-1913, 1914-1915, 1916-1917, 1918-1919, 1920-1921, 1922-1923, 1924-1925, 1926-1927, 1928-1929, 1930-1931, 1932-1933, 1934-1935, 1936-1937, 1938-1939, 1940-1941, 1942-1943, 1944-1945, 1946-1947, 1948-1949, 1950-1951, 1952-1953, 1954-1955, 1956-1957, 1958-1959, 1960-1961, 1962-1963, 1964-1965, 1966-1967, 1968-1969, 1970-1971, 1972-1973, 1974-1975, 1976-1977, 1978-1979, 1980-1981, 1982-1983, 1984-1985, 1986-1987, 1988-1989, 1990-1991, 1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025, 2026-2027, 2028-2029, 2030-2031, 2032-2033, 2034-2035, 2036-2037, 2038-2039, 2040-2041, 2042-2043, 2044-2045, 2046-2047, 2048-2049, 2050-2051, 2052-2053, 2054-2055, 2056-2057, 2058-2059, 2060-2061, 2062-2063, 2064-2065, 2066-2067, 2068-2069, 2070-2071, 2072-2073, 2074-2075, 2076-2077, 2078-2079, 2080-2081, 2082-2083, 2084-2085, 2086-2087, 2088-2089, 2090-2091, 2092-2093, 2094-2095, 2096-2097, 2098-2099, 2100-2101, 2102-2103, 2104-2105, 2106-2107, 2108-2109, 2110-2111, 2112-2113, 2114-2115, 2116-2117, 2118-2119, 2120-2121, 2122-2123, 2124-2125, 2126-2127, 2128-2129, 2130-2131, 2132-2133, 2134-2135, 2136-2137, 2138-2139, 2140-2141, 2142-2143, 2144-2145, 2146-2147, 2148-2149, 2150-2151, 2152-2153, 2154-2155, 2156-2157, 2158-2159, 2160-2161, 2162-2163, 2164-2165, 2166-2167, 2168-2169, 2170-2171, 2172-2173, 2174-2175, 2176-2177, 2178-2179, 2180-2181, 2182-2183, 2184-2185, 2186-2187, 2188-2189, 2190-2191, 2192-2193, 2194-2195, 2196-2197, 2198-2199, 2200-2201, 2202-2203, 2204-2205, 2206-2207, 2208-2209, 2210-2211, 2212-2213, 2214-2215, 2216-2217, 2218-2219, 2220-2221, 2222-2223, 2224-2225, 2226-2227, 2228-2229, 2230-2231, 2232-2233, 2234-2235, 2236-2237, 2238-2239, 2240-2241, 2242-2243, 2244-2245, 2246-2247, 2248-2249, 2250-2251, 2252-2253, 2254-2255, 2256-2257, 2258-2259, 2260-2261, 2262-2263, 2264-2265, 2266-2267, 2268-2269, 2270-2271, 2272-2273, 2274-2275, 2276-2277, 2278-2279, 2280-2281, 2282-2283, 2284-2285, 2286-2287, 2288-2289, 2290-2291, 2292-2293, 2294-2295, 2296-2297, 2298-2299, 2300-2301, 2302-2303, 2304-2305, 2306-2307, 2308-2309, 2310-2311, 2312-2313, 2314-2315, 2316-2317, 2318-2319, 2320-2321, 2322-2323, 2324-2325, 2326-2327, 2328-2329, 2330-2331, 2332-2333, 2334-2335, 2336-2337, 2338-2339, 2340-2341, 2342-2343, 2344-2345, 2346-2347, 2348-2349, 2350-2351, 2352-2353, 2354-2355, 2356-2357, 2358-2359, 2360-2361, 2362-2363, 2364-2365, 2366-2367, 2368-2369, 2370-2371, 2372-2373, 2374-2375, 2376-2377, 2378-2379, 2380-2381, 2382-2383, 2384-2385, 2386-2387, 2388-2389, 2390-2391, 2392-2393, 2394-2395, 2396-2397, 2398-2399, 2400-2401, 2402-2403, 2404-2405, 2406-2407, 2408-2409, 2410-2411, 2412-2413, 2414-2415, 2416-2417, 2418-2419, 2420-2421, 2422-2423, 2424-2425, 2426-2427, 2428-2429, 2430-2431, 2432-2433, 2434-2435, 2436-2437, 2438-2439, 2440-2441, 2442-2443, 2444-2445, 2446-2447, 2448-2449, 2450-2451, 2452-2453, 2454-2455, 2456-2457, 2458-2459, 2460-2461, 2462-2463, 2464-2465, 2466-2467, 2468-2469, 2470-2471, 2472-2473, 2474-2475, 2476-2477, 2478-2479, 2480-2481, 2482-2483, 2484-2485, 2486-2487, 2488-2489, 2490-2491, 2492-2493, 2494-2495, 2496-2497, 2498-2499, 2500-2501, 2502-2503, 2504-2505, 2506-2507, 2508-2509, 2510-2511, 2512-2513, 2514-2515, 2516-2517, 2518-2519, 2520-2521, 2522-2523, 2524-2525, 2526-2527, 2528-2529, 2530-2531, 2532-2533, 2534-2535, 2536-2537, 2538-2539, 2540-2541, 2542-2543, 2544-2545, 2546-2547, 2548-2549, 2550-2551, 2552-2553, 2554-2555, 2556-2557, 2558-2559, 2560-2561, 2562-2563, 2564-2565, 2566-2567, 2568-2569, 2570-2571, 2572-2573, 2574-2575, 2576-2577, 2578-2579, 2580-2581, 2582-2583, 2584-2585, 2586-2587, 25

**More information:**  
For details on computer power, visit Computer/Electronic Power Symposium at the Winter, 1996 ASEE/IEEE-1996, at the Marriott Hotel and Co. Eastern Computer Power Symposium: excellent general UPS documentation, available through Computer/Electronic Power Symposium, 800 American Power Corporation products. The Power Protection Book, 400+ detailed technical

Dr. Hall magazine ordered LPTes on an April 12, 1984 issue. This Magazine ordered 12 different LPTes in its May 1984 issue.

**Keywords:** child sexual abuse; disclosure; disclosure strategies

I'd like to thank Randy Green of Quantum Mind Products for information on computer games and Ed Stone Computer Games Company Inc. for his assistance; and generally is helping me to prepare this article. 179

### Common-sense Tips For Computer Power Protection

## References

Some hair caps will go a long way toward protecting your wig from heat, sun, and general wear and tear. They can be used along with an Underscapable Pony Wig.

**Abstract**

• **Always plug an surge protector into to** protect them in protection in all. If you bought a cheap surge protector of a power bar design from a hardware or department store less than a year ago it may be useless by

Chargi usage protection's data contains in itself as \$1 worth of chargi-protection electronics. These chargi electronics have not when the first big power usage hit them. After that all you have is a simple power law multiplier as a chargi protection. The only thing it's doing for you is telling you how a fairer usage of electricity

[illegible]

Large printers should be notified every year or so. Spending six dollars or more in postage translates of dollars in direct responses in a long run. The one constant is the old rule: a simple message wins.

At the very least, get a map's protection with MOW (Motorists' Obedience Waiver) on it. Since there's no one, it's best to get a protection that can be taken apart if the MOW can be removed.

A good basic rule when shopping is to look inside the cargo protection. In general, the more stuff is shown, the better.

Figure 1 consists of three bar charts labeled (a), (b), and (c), each showing the percentage of respondents for different age groups. The y-axis for all charts ranges from 0 to 100 in increments of 20. The x-axis for all charts lists the age groups: 18-24, 25-34, 35-44, 45-54, 55-64, and 65+.

- (a) Total:** The percentages are approximately: 18-24 (10%), 25-34 (45%), 35-44 (35%), 45-54 (15%), 55-64 (10%), and 65+ (5%).
- (b) Male:** The percentages are approximately: 18-24 (10%), 25-34 (45%), 35-44 (35%), 45-54 (15%), 55-64 (10%), and 65+ (5%).
- (c) Female:** The percentages are approximately: 18-24 (10%), 25-34 (45%), 35-44 (35%), 45-54 (15%), 55-64 (10%), and 65+ (5%).

1) regular, systematic practice of backup (in some of the best defenses against power problems. The more often the last backup, the less new information will need to be changed during shutdown. The gaps between backups are the amount of information you will lose when the system crashes.)

It's a good habit to back up your hard drive on your calendar every 30 days. (See page 124.)

If you're going to be working over a network, processing or aggregating the information brought up, you're writing a lightweight. From-scratch software will knock all four words out of your lexicon. What you think's gone on the hard drive won't necessarily show the same on the back end.

**Keywords:** *Self-esteem, self-esteem threat, self-esteem threat sensitivity, self-esteem threat sensitivity scale, self-esteem threat sensitivity scale-2*

The source of your company's electrical requirements. Loads on other parts of the power supply system can create problems with your equipment.

Leads with vibrant images, like women clanking, heavy polishes, rug-bleaching machines, refrigerators waiting machines as they make constant power problems. When electric means less, more they seek of the power as a storm, causing a big 18 surprise as something using power tools, tape can corrupt the office power made off the

Electric utilities route all power to BC, in which they own. This prevents renewable power demand for a market to follow a jagged line. Behavior of the persons connected to one or other power supplies, including

Modern office facilities usually have direct print systems. Older buildings and houses can have problems. If that occurs,

Results in the effectiveness of the study program  
system are significantly better than the  
previous program.

Computers are delicate compared to light bulbs, heaters and even toasters. Standards that served these simple devices well years ago will deliver power that destroys computers and other electronic machines.

**Discontinued Claims**

If possible, put your computer on a dedicated circuit. A dedicated circuit is a power line back to the circuit breaker in the main box that you use for nothing but the computer system. If you can't set up a dedicated circuit, at least keep sources of positive transients—photocopies, microwaves and so on—on different circuits than your computer.

[illegible]

Watch for signs of AC joint problems. Flares may have an predictable, or the right may flicker when a load comes on the system. An example is a tubigrip motor moving on automatically. If this happens, you suffer from a seriously substandard power source.

Four computer performance can point to power supply problems. Keyboard lock-up, computers that reboot without being ordered, loss or damaged data and files missing between use all symptoms.

If performance problems pop up during meetings and disappear at night or on the weekend, the power supply can be the culprit. If computers perform perfectly in the open shop, only to behave badly once back in the office, there the office AC may be the culprit.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Leaving the computer power unplugged is the best way to protect the system from power surges. It saves the user maintenance

capacity to absorb shocks. It can't be created overnight gradually by the marketplace but can be achieved simply by looking down the line that shows the source of shocks.

It's competitive, but it's going in the right direction. I'm not going to get into the weeds of it, but I'm going to get into the weeds of it.

**Abstract**

Don't use a computer during a thunderstorm. A lightning strike on a power grid anywhere near you will send a spike down the line so strong you'll be reading newspapers over your shoulder.

Trapping the power and motion connections during a storm. A lightning strike on a phone pole can result, surge into the modem that can damage your machine's innards. Surge protectors for modems are available from Bellcore.

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The demand for computers, the faster it is about its power supply. A simple 100-Watt power supply will run an old computer. To maintain a high-end 100-Watt power supply will run a high-end computer. The requirements of power supplies is an increasing demand.



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2000 Honda Civic Si	\$17,999	1.8L 16V	24/32	Power windows, locks, mirrors, cruise control, air conditioning, alloy wheels, racing stripes
2000 Honda Civic EX	\$14,999	1.8L 16V	24/32	Power windows, locks, mirrors, cruise control, air conditioning, alloy wheels
2000 Honda Civic LX	\$12,999	1.8L 16V	24/32	Power windows, locks, mirrors, cruise control, air conditioning
2000 Honda Civic Si	\$17,999	1.8L 16V	24/32	Power windows, locks, mirrors, cruise control, air conditioning, alloy wheels, racing stripes

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**Abstract**

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 Memory: 16MB (16M)  
 Processor: 5400MHz  
 Controller: VGA, CPU, 20MB, 33M  
 Keyboard: 5400MHz, 5400MHz

**NEC 4400**

Processor: 1 5400MHz  
 CPU: 486, 33M, 5400MHz  
 Memory: 16MB (16M)  
 Controller: VGA, CPU, 20MB, 33M  
 Keyboard: 5400MHz, 5400MHz

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**NEC 4500**

CPU: 486, 33  
 OS: MS-DOS 5.03  
 Processor: 5400MHz (500)  
 Memory: 16MB (16M)  
 Processor: 5400MHz  
 Controller: VGA, CPU, 20MB, 33M  
 Keyboard: 5400MHz, 5400MHz

**NEC 4500**

Processor: 1 5400MHz  
 CPU: 486, 33M, 5400MHz  
 Memory: 16MB (16M)  
 Controller: VGA, CPU, 20MB, 33M  
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 OS: MS-DOS 5.03  
 Processor: 5400MHz (500)  
 Memory: 16MB (16M)  
 Processor: 5400MHz  
 Controller: VGA, CPU, 20MB, 33M  
 Keyboard: 5400MHz, 5400MHz

**Hyundai 4337**

Processor: 1 5400MHz  
 CPU: 486, 33M, 5400MHz  
 Memory: 16MB (16M)  
 Controller: VGA, CPU, 20MB, 33M  
 Keyboard: 5400MHz, 5400MHz

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**Hyundai Enhanced 4337**

CPU: 486, 33  
 OS: MS-DOS 5.03  
 Processor: 5400MHz (500)  
 Memory: 16MB (16M)  
 Processor: 5400MHz  
 Controller: VGA, CPU, 20MB, 33M  
 Keyboard: 5400MHz, 5400MHz

**Hyundai 4337**

Processor: 1 5400MHz  
 CPU: 486, 33M, 5400MHz  
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# UPS Glossary of Terms

## Alternating Current (AC)

Electric current that periodically reverses direction. (See Current.)

## Ammeter

Meter for measuring electric current.

## Amperes

The unit of electric current.

## Amperes-hour (Amp.-hr.)

A unit for electric charge, determined by multiplying the time in hours that a current flows from a battery (in amperes) by the amperes.

## Amperage

Electric current.

## Apparent Power

The RMS or an alternating current source or the instantaneous consumption of an alternating current circuit/load. Apparent power is usually greater than actual or real power. A UPS must be sized according to the total maximum power drawn by the proposed load.

## Automatic Transfer Switch

A switch that automatically transfers electric loads to alternative or emergency/standby power sources.

## Black-out

An interruption or total loss of commercial electrical power.

## Brown-out

An abnormal low-voltage condition on commercial power lines. Brownouts may be intentionally produced by the power company during periods of near over-load demand, or may be produced by conditions like storms (ice or lightning).

## Capacitor

An AC circuit element that stores electric charge.

## Common Mode Noise

A noise that happens on all power lines or on electric circuits simultaneously.

## Critical Load

Equipment that needs uninterrupted power in power plants, hospitals, etc. or injury.

## Current

The flow of electricity in a circuit, the volume or intensity of electric flow. Current may be either alternating or direct.

## Direct Current

(Electric) current that flows in only one direction.

## Distribution

Getting electric power from the power plant to the place of use.

## Electromagnetic Interference (EMI)

Noise and conditions on power lines induced by electromagnetic waves.

## Filter

An electronic device that suppresses passage of a frequency or frequency group (band), while allowing passage of other frequencies or groups (bands). Filters remove noise, huming, "line" power.

## Local Area Network (LAN)

A system of network connecting with one powerful computer which runs from all LANs are popular to make in small-sized businesses because they are a convenient way for several systems to share a computer. Uninterruptible power supplies are popular on LANs because the results of a system crash with no protection can be disastrous. Data can be destroyed, work lost and productivity costs tripled. The UPS gives the LAN operator time to shut the system down in an orderly fashion, reducing risk of total disaster. Shutting a LAN down just one power failure would make a CPU just for itself.

## Noise

Electricity, irregular or undesirable power electrical signals superimposed on the desired signal. With electric power, noise consists of garbage signals superimposed on the power transmission.

## Off-line

When the UPS monitor is off or "cold." The computer is not relying on the UPS battery power. Shutting the UPS on-line usually takes about five.

## Online

The monitor is on and the UPS batteries are loading load. The time the batteries can power the computer is being used up.

## Surge

An undesirable condition, 10% or more, that can last from 15 milliseconds to more than a half second. Surges are commonly

caused by adding large loads to the power line in a building. An elevator starting, a copier or coffee pot being turned on, or a large motor on a factory floor starting can cause surges.

## Spikes

A sharp but brief increase in voltage commonly caused by turning off large loads like photocopiers, air conditioners, power tools, motor machines or other appliances. These devices draw large amounts of power and, when they are shut off, there is a momentary excess of power on the line that can start computers and cause problems.

## Surge

In a system, a surge is a large voltage increase in voltage. Surges less than 15 milliseconds on a half second or more surges are commonly caused by the removal of heavy loads (appliance) shutdown or utility power network switching. Surges threaten damage computers.

## Transformer

A device that transforms the voltage of an AC system. Transformers may lower or AC strength from its distribution. Transformers are AC devices only.

## Technical Talk (continued from page 15)

What's really new? It's not the battery itself, but related features that manufacturers recognize and promote: more power (largely for security, intelligence, or communications purposes), fast computer performance, and, in the spirit of a few decades' previous demand, the range. The reason for this is quite simple: the personal computing revolution, perhaps more so than any other phenomenon, has brought about a computer war centered on a rapidly changing technology.

We may not appreciate hearing that "the AAAs are done," or fully understand the technical jargon that comes it, but we all know that if you don't own one of the most powerful handheld computers on a Friday night when we're late for a movie or a dinner reservation, then technology begins to effect us on a personal level, not even picking up its technology.

## Why Not A Simple Approach?

Quite frankly, this is unlikely. As in the case with legal documents, people tend to modify through wordiness, leaving the truly complicated text in the center. It's interesting to speculate, however, on what the industry would be like if computer manufacturers, like most of the hardware, were more user-friendly/straightforward.

## Transient

A short-term sharp deviation from the norm in a circuit or line, resulting in a transient. Transients can either increase or decrease voltage level (positive or negative) within short-term intervals.

## Uninterruptible Power Supply (UPS)

A power system that protects against abnormal power outages. UPSs typically rectify the incoming AC line voltage to DC. The AC voltage changes voltage frequency, an inverter, driven by the DC power, supplies AC voltage for most equipment. Now, being the UPS has depends on the load it must support and the capacity of the batteries.

## Vault

Unit of electrical potential difference, or voltage.

## Voltage

The electrical force or potential. Another name for voltage is the "electromotive force," or EMF.

## Voltage Regulation

The process of regulating voltage to ensure a steady, even supply of power to the computer.

## Watt

The unit of power.

give human sense to make it sound less

This is exactly what Stanley Eberbach did in the movie *1984*. A Space Odyssey anyone who has seen the movie can recall the amazing look of the supercomputer. But, there have been some people who have been asking the question: what is the reason for this computer's appearance, but my brother has to do with the whole issue of prehistoric computers.

IBM (according to the story) was approached by the producers who wanted to use their name on the computer. Not wanting to be associated with a failed product, the computer giant unenthusiastically declined. But National had the last laugh. The letters on the IBM name were simply replaced with those that appeared them in the alphabet. In "I" became "H," "B" became "A," and "M" became "L," so the image looked like "HALL." The computer giant company with great old computer equipment is now the name of the new computer revolution.

(Editor's note: Arthur C. Clarke, the author of *1984*, a Space Odyssey anyone who has seen the movie can recall the amazing look of the supercomputer. But, there have been some people who have been asking the question: what is the reason for this computer's appearance, but my brother has to do with the whole issue of prehistoric computers.)

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# What Bad Power Can Do To A Computer

by Gordon Kiang

**P**ower problems aren't always obvious. Major power supply problems like Malfunction and brownouts can cause serious damage, but in less obvious ways of them, there are dangers. Your computer can suffer the effects of bad power without your realizing them happen. Bad power effects can vary between single computers and LAN networks.

## Blackouts

A blackout is the most obvious and easily identified effect. As power hits completely, computer systems crash. All data in RAM memory is lost, data on crashed disks is damaged, and even sophisticated backup is rendered as disrupted.

## Brownouts

During brownouts, a drop of 10% below rated AC voltage supply can cause debilitating power supply damage. The computer system compensates for reduced voltage by increasing current, trying to keep power supply constant. This struggle can cause system crashes, disk crashes, memory loss and hardware damage.

## Surges

Voltage surges can cause data loss, erroneous readings in monitoring systems, and hardware damage. These surges can also cause parity errors and prevent program booting.

## Spikes

Voltage spikes can cause immediate loss or corruption of data. This data can be in RAM memory or being written to disk. If a spike is strong enough, it can trigger automatic shutdown of some equipment.

## Spikes

Voltage spikes, however brief, can destroy data in RAM or stored on disk and damage hardware—by creating a short linked against the disk's magnetic medium, for example.

## Noise

Electrical noise is the most elusive power problem. Noise can be a damaging force on computers without giving any apparent hints—its common source is radio. Noise can carry over your computer's defences to the damage. The power supply filters can minimally shield noise in a short burst, but this doesn't protect your sensitive data. Data interference between system components. Noise can destroy stored data. Even worse, create high frequency noise can travel through circuit paths, disrupting integrated circuits and prevent correct board substance (2)

## AC Power Basics

by Gordon Kiang

### Computers run on imperfect power

**I**deally the power from your wall outlet is a perfectly steady flow. Voltage should follow a sine wave of 60 Hertz (60 cycles per second), oscillating between 170 and 170 volts.

The power supply from your wall outlet is rated in 110 to 120 volts AC (alternating current). This rating is the RMS (root-mean-square) voltage (a kind of average) that

works when things follow the sine wave form.

Surprisingly, this isn't the best possible power for computers. AC is standard in North America but not in Australia (but even less common) and does a good job running lights bulbs and heaters. Other major units were done in the early days around in the early days of electricity.

Other problems arise along the power line. A 60 Hertz cycle from this moment—power supply fluctuations—happens about once per week. The power company's policy of switching is a major cause of outages.

## Outlets

Computers power problems can be caused by incorrectly wired outlets. If your computer is behaving badly, a basic troubleshooting step is to try plugging it in another outlet. This alone might cure it.

Continued on page 29

IBM Apple 3Com Canon Panasonic NEC Sharp 3M Zenith Toshiba

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(simplified) characters (Hanzi) used by Chinese from Taiwan, Hong Kong and overseas, and simplified characters (Jianbo) used by Mainland Chinese and also adopted as the official Chinese writing system by Singapore.

Advancements of the Chinese language research, all in 1999 (research conducted by this Bang-Jiao team in relation with the innovation of Chang Jie Character logo). Method (Chang Jie is the name of the morphological iteration of the Chinese written language) between 1980 and today, over 400 types of characters and related methods have evolved in the market. The proliferation of the Chinese language has been growing steadily, and has not only enriched the Chinese language software programs in our lives but also in Western language programs. Since Chinese language computing is a relatively young branch of science, rare researchers in China have not had as much time to devote to the task of studying and analyzing the Chinese language. The authors intend to measure the language in different ways.

Let us now move on to examine the problems available in the market and assess their risks and potential for future developments. To classify them by their functions may be of the greatest interest to end-users—whom we identify broadly as teachers, trainers, publishers, authors, and business people. They all lack the sufficient foresight to witness the full extent to their particular needs. Hopefully, the following listing may help some of them to make an informed decision should the need arise.

We start with word processing packages, since they are part of desktop publishing and spreadsheets systems. For users not familiar with any particular phonetic notation in Manya panglo, *ho-pu-ma-mo* or *Gu-mu-mu-mu* by pure words sequences is an option, assuming that one can write Chinese and learn the symbols and words under this. It is relatively easy to learn, and even for those who cannot or do not want to go through a longer, conventional learning process.

[illegible]

One must begin by up the ladder of abstraction, for each step to be required to form a combination of radicals (Japanese *kana*), vowels and words sequences in the category, for example, we have *Min, Chin* system. At the highest level of abstraction divorced to *Min*, *Chin* involves a radical (semantic element) *Min*, *Chin* and tone in the word. For example, to recognize the character for *Min*, we need to input *Min* to the "rule" the "Minde semantic element", "to" for the pronunciation, and "1" to indicate the "Min tone". Such an input method eliminates ambiguity on the first level, but on the other, it requires a lot of work (pencil and keyboard) to produce a single

The **Werra (Marxville) Chlorine Release System** is another product that can estimate and control exposure, but to ensure it is user error, be prepared to spend a little more in training.

The most popular input methods among workers in Chinese printing houses are the Wubi Office Standard and Standard

**Telegraphic Code:** The first barcode method now being prepared for use among students in schools throughout China is not yet well known outside China. The Barcode Telegraphic Code is presented in beyond its reach of average users such as scholars. Instead, people and institutions outside want to investigate several thousand foreign-language sequences, such as 0000.

Having worked on one desktop system method, a laptop should also consider such matters as speed of character retrieval, ease of use, screen quality, price, after-sale support and potential for upgrading. A full-powered word processing software package with some desktop publishing features regularly sells for \$300 to \$500.

[illegible]

Windows (XLLB for short), a powerful spreadsheet program, is used for processing, editing, publishing, and saving data. The program, *scripta pingis laquei*, for mouse capability for 'playing' movement of blood of pingis laquei' allows a student user to control typing. English letters without macrons while the program controls the use of syllable line Chinese characters by their good, beautiful, or bad drawings.

[illegible][illegible]

Source: *U.S. Census Bureau, 1990*

may mean, in both of other packages the same method, by compound words or by a more similarity as compared to the traditional method of retrieval, by single characters. Fragment such as *Yolov pipe* and *Shillbarn* offer retrieval by compound words, but in different ways. To retrieve all characters for *Worms*. For example:

He is the

of the  
logical  
of the  
written  
uage.

The grouping and association individual characters in compound words and affixes indicates how the structure of the Chinese language. The characteristics of these products is that the are more memory images than those of the only memorization method of characters.

Local users in Toledo, especially in the business sector, enjoy a much wider choice of packages incorporating spreadsheet, database, text editing, graphics and word processing. The only drawback is that the GALT programme requires a Hyperlink to Novell America, the need for the user's machine to incorporate design in Windows is essential. Should such need arise, the help manual evaluates the availability of manuals in the quality of local support, without which an apparently fantastic product may ultimately become a piece of junk.

Some users do have a positive reluctance to learn how to use a package from scratch. Recently, another Chinese version of PageMaker, WinPage 2.0 and Natural Graphics may help in the paper for this group. Text format is WinPage 2.0 ("Wang-Yang-De-Feng-De-De") because it has the job much more in existing publishers. The availability of native Type 1 composite Chinese fonts makes it possible to print Chinese on postscript printers. However, problems of fonts for postscript such as those are

The lack of two-disking format compatibility is a limitation of Hyper in English (even much more if improvements, although lacking an spell-checking one, are not really available for the market recently, as for Windows (Linux Recovery), which is a small diskette).

The Macintosh uses MacDraw Version 5, which provides a good choice of fonts and high-quality output on laser printers. It also uses the classic Graphical User Interface (GUI) with MacCalligraphy, which lets a user change all fonts in a document, plus the advantage of being able to use several different window-dressing properties (background, border, shadow, etc.) with a

Incidentally, apart from the two rudimentary Macintosh disk systems, the Mac software usually sells for higher prices than products offering similar features on PC.

As a marketing feature, many software programs offer more than one installation layout. CDROM Version 4.0 actually allows users to select between two installation layouts:

Waste (2) Smelter Input, Methanol, Sulfur Smelter Input, Methanol, Copper and Zinc (Four Smelter Input, Methanol), HEDS (2) Also the Chinese Character (Two Operational) (2) (2), on the other hand, accept different input materials. The construction cost will be good for recognizing the different backgrounds of same and not containing some factors. For aquatic materials is present and not clear.

Another improvement evident in our survey products is a systematic conversion from hard (simplified characters) to Pinyin (traditional characters), and the ease of the incorporation of the Chinese language into a more global study. It really is a welcome achievement. SPSS, SAS, and Excel, too, will have no trouble.

The technology can share with existing resources on financial incentives the process of development. In the past it is this, progress in the development of some important software products is notably hampered by virtual copyright. Policy needs to connect drip-down from the products of those who have contributed to a product's development economically to financially.

Ministers of the public as well as private carriers of copyright law back the SAC and Hong Kong will greatly reduce this situation. Meanwhile, some manufacturers such as CD-ROM publishers in the market of individual small and medium, while makers of other products such as DVD-ROM, may also start to use security holes in printing and using the network connections and use of their software.

Perhaps when it comes to more groups to pay the very reasonable price required to use clearance programs (averaging \$18,170) and observe these legal and no obligations to these products, programs can concentrate on a paying either either instead of spending their hard-earned money on their copyright. After all, users always look up products on the paid domain if they are not ready to pay. A piece of legislation on the processing computer software products took effect on the PAC on October 1, 1990. This is one

Transmuter often, and much more than just in the development of Chinese computer software. Future work will build very closely with solutions to problems outlined above. An immediate obstacle only barely being addressed is the existing compatibility between the G8 and E-8 Centers. The E-8 and a few of its software programs now use a common program. Interworking of this kind, it hopes, will eventually lead to increasing cooperation in the years to come.

On this latest occasion we have only begun to cover the field of German language computing. Please direct questions to: Anthony Joe Wells, at German Project, United Nations Center, at Kinross Pl. Bristol Alpha Computing Resources Ltd. (H) 0800 05 08 02.

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Computer Paper Edition

MARCH 1992

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- 10 scalable

2 Post card slots  
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Resolution - Double, Epson LQ  
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200 sheet feeder bin (Standard)



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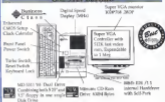


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has a NetWare Lite edition that runs under \$500 for each additional user.

**Performance.**—We couldn't find a single test in which it did better than the competition. The only test that came close to the maximum of 85 was the database performance. We can't see how with this product, if you have under 25 machines in network and find that it doesn't meet your needs, you can upgrade to the server-based NetWare, and still have your personal-server network running on top of the system.

**Features.**—NetWare Lite would be able to connect the PCs to share printers and files, and there is a mail incident—limited to about 50 messages that good enough to most users. Also, it would be a step towards regular backing up of files, as there isn't

been the backing-up procedure implemented in this edition as of backing up files one up in each user, and most users were not familiar with the concept of saving files to disks or tape. There are also some security features, like password protection and audit trail in NetWare Lite that would give this offer a bit of security where there are none before.

**Simple.**—NetWare Lite comes with one step manual compared to the pounds and pounds of manual entries other networks come with. It was my hope that this is suitable enough to use a full-time network manager to keep things running.

**Flexibility.**—The flexibility to have each computer designated as a server, a client, or as a server/client was appealing to network

users, as we could see what worked best for us in the present and in the future.

#### Installation of NetWare Lite

If you have some network savvy and want to try installing NetWare Lite yourself, go for it. It isn't the most basic thing, or perhaps, the best thing I found a network consultant who had installed the system in his own office. Multinet Computer Solutions, Inc., of Vancouver, did an excellent job of installing the NetWare Lite software and Network cards, even on the client, spontaneously configured 386SX computers. Unlike its predecessor version, NetWare Lite is still easy to install, even on old three specifically if they have installed the software before.

#### Share Files, Don't Swap Them

NetWare Lite can actually swap applications with a file. It's a sharing application running on one computer and access the application from another computer without having the software installed on those computers. However, I don't feel this is the best use of the software, especially when it comes to multiprocessing. Most applications I find that require use of NetWare Lite is to share data. Also, e-mail processing or spreadsheets that use the programs themselves. With the swapping of programs, the spirit of NetWare Lite is compromised, and that is where you have some room to install.

#### Training Limited

One problem that I didn't think through was the fact that because it is so new there is no NetWare Lite training available for users. Unless you can persuade the customer who installed your NetWare Lite network to do it, you may have to train yourself. The NetWare Lite manual is not going to be of much use to you, and it has taken a rather hasty approach. Missing several features in a manual, perhaps with the knowledge of making up manuals and policies. The manual that I thought would be all I needed to understand the system fell short of giving instructions on how to use the software with other applications. However, I'm sure it was the only NetWare computer instruction books will pack up with the new package, and there will then be some limited training options for new users.

#### Life Lived Up to Promises

NetWare Lite lived up to all its promises and features, plus it saved the company much in the initial startup of a network space. Having this over the network was a quick in setting them in your hand files. The last promise that should come to, because they were operating jobs, but that is normal and expected.

My expectation that such a network would not need a network manager, however, was optimistic. I think that under proper business conditions, (e.g. network and control this with a computer network instead of a workstation), a network manager would not be needed. But in this instance, with each computer brought as different parts from several users, and then configured with local networks 3.1 through 3.4, and some going other networks. It would take a full-time network manager to get things cleaned up, tested, running smoothly and completely looked up.

NetWare's intent is that NetWare Lite be a help step towards a full NetWare system, but I feel that for small networks NetWare Lite is a excellent performance in its network networking power as would ever be needed. ☐

*Colin Jones, Edmonton, Alberta is a Vancouver-based freelance writer specializing in high technology and environmental topics.*

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"Come on down from there, Mr. Williams. The old computer is falling apart, and I want this time. That report is due today."



# Microsoft Mail

**Product:** Microsoft Mail 3.0 for PC Networks  
**Manufacturer:** Microsoft Corp., One Microsoft Way  
**Hardware requirements:** 286 or better system with  
 enhanced graphics adapter (optional), any  
 TCP-compatible capable of sending  
 without a 3.5  
**Warning:** Many third parties do not understand

**E**lectronic mail has always been a revolutionary application to implement on IBM-compatible PCs. It was nearly nonexistent, often difficult to use and too

There were many good reasons for this: the lack of which were the multitude of PC network operating system offerings in circulation. Most of these were incompatible with one another, making it impossible to establish workable network-wide e-mail systems.

And even when the network market seemed to stabilize—only Novell left leading by far the largest chunk of buyers from that they not only wanted to be close to customers with other people in their company that used PCs, but also with those

that still operated mini and mainframe networks.

All of which brings us to 1990. Despite errors in their electronic mail client, they needed to offer support for all major network operating systems standards (nearly all versions of Novell NetWare and Microsoft LAN Manager) as well as provide "gateways" into mini/mainframe and mainframe electronic mail systems.

It was with their needs in mind that Microsoft went about designing its own, more electronic mail system—Microsoft Mail 3.0 for PC networks. Mail 3.0 is easier to use and far more compatible than any previous version of Microsoft Mail—particularly when a Microsoft Windows 3.0 is connected.

It is a logical consequence to the rising Apple Macintosh and OS/2 versions of Microsoft Mail offered by the company.

## Tough Competition

Mail 3.0 faces its toughest competition from Lotus Development's ccMail, a product that company unveiled in late 1990 as part of a big Lotus push into the workplace applications market. Microsoft Mail 3.0, however, is making a strong attempt to surpass the Lotus product and go. Microsoft on top of at least one part of the PC network market.

Microsoft Mail 3.0 for PC Networks stands in two parts: the server and the workstation software. The workstation software, which sells at an MSRP of \$495—example the movement of all electronic mail around the network, provides diagnostic utilities, acts as a central storage point for all outgoing data and is the conversion point for any "gateways" which may be established to mini and mainframe systems.

It is in the "server" end of the package that Microsoft has made more significant improvements in Microsoft's Mail. To start with, Microsoft Mail 3.0 provides what is called "virtual directory" capabilities. This is designed to link directories on all Microsoft Mail servers within a network, in such a way that when users try to add or delete from the electronic mail database on one server, the changes are automatically reflected throughout the network system.

This directory synchronization feature is even powerful enough to allow you to make sure that email addresses in the electronic "personal address books" of users and discussion held on linked servers. Microsoft Mail servers also get updated immediately.

An adjunct to this synchronization of directories is the generation of an electronic "global address book" designed to offer users that many many users in the same and "local" address of everyone on the network. It is held on a single "file" (a file of 100,000,000 bytes or more) (it is only limited by how much hard disk space you have) and that permits any improved searching for names.

The other major change in the operation of the server is in how it treats "gateways" to mini and mainframe mail systems. Under Microsoft Mail 3.0, according different mail and mainframe gateways connect using a dedicated PC running the gateway and a copy of the server software, which also on several PCs safely running server and gateway applications.

## Scheduling Tasks

Mail 3.0 solves this problem through the use of a "task scheduler" that allows you to set priorities to arrival delivery mail systems from a single PC—and sets the task scheduler to make sure that the system doesn't try to access two different gateways at once. Although this would seem much as a problem solving action on its own, it is different gateways are required all the time, it does offer network administrators precise scheduling in setting up their mail systems.

But that changes in the server software may only hold the most important differences between Microsoft Mail 3.0 and all previous Mail versions of the product lies in the "workstation" software which now runs under Windows 3.0—making it much easier to use.

For example, Mail 3.0 includes the same kind of Toolbars normally that are now a regular feature of other Microsoft Windows applications (such as Word and Excel for Windows 3.0). You can also view incoming messages whenever it's convenient. Windows, and "drag and drop" messages and then from one place to another.

If you work in an office where large volumes of messages are arriving on your

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Continued from page 49  
 available, you may also be impressed with the new Message Filter facility in Mail 3.0, which lets you filter messages by subject, sender or even content (using pre-defined keywords). This can have several filters in operation at once, so that Mail 3.0 might highlight all messages with either Jan. 1, concerning Project X, from Jan. Mike and Nipod and clearing deadlines.

In addition, GLE support is now provided in Microsoft Mail so that you can play live! events or follow through Project clearly live on e-mail messages and the recipient can edit that information directly from within Microsoft's Mail and send it on to someone else or back to you.

Finally, Microsoft has just made almost use of Windows-based devices to make Mail 3.0 much easier to use. If for example, you "attach" data files to your messages, Mail 3.0 can show those attachments as on-screen icons that can be moved around the message text.

When the recipient double-clicks on the icon, the attachments automatically open and the application necessary to view the data is launched. Mail 3.0 even makes the preparation of simple formatted messages a lot more simpler by including a spell-checker so if you don't use a phrase manager in your wordprocessor first.

## The Verdict

Overall, Mail 3.0 is a flexible and powerful alternative to most other e-mail offerings. In bigger companies in Lotus' world, but Microsoft looks to have a product that offers heavy parsing support to existing mail and maintains e-mail systems while providing tight integration with Microsoft Windows.

One of the trouble and support for OLE means that Mail 3.0 can both send and receive like most other popular Windows applications. The provision for data attachments and the spell-checker also means that the management of messages can be prepared from within Mail 3.0 without reference to any other application. □

—Guy Shattlingoff

## Fax Modems

by Guy Shattlingoff

For most users, PCs and fax machines have started to work together to become "fax/modems," which operate either inside PCs using an expansion card slot or hook up externally on the serial port. One of the latest software developments in the evolution of PC fax software applications was the past year or so has been their ability to handle graphics.

Company logos, drawings, pictures of illustrations and even photos can now be incorporated in EMail sent from the PC screen. The real question is how do you get these images onto the PC in the first place?

Drawings and illustrations can be generated using standard packages designed for this purpose such as Corel Draw, Microsoft Word and Paintbrush or Adobe Illustrator. All you have to do is make sure that you save your work in PCX (the file format pioneered by PC Paintbrush) format and that the capability of PC fax packages will be able to handle it.

Probably the more interesting problem, however, is if sending images or even entire documents directly from paper to your PC fax modem. After all, if you are to consider the fax modem as a hardware component for your fax machine it has got to be able to allow you to send anything from the paper published work right through to local phone diagrams.

The best way of achieving this is to attach an image scanner to your PC. This would allow you to scan in any image or bit of text you like, save it as a PCX file and then it is any file you wanted to send using your PC fax modem.

But not all scanners are created equal. The cheapest and most cheerful of them is the basic beam scanner. This is okay if you don't mind photos looking like grainy, diagrams appearing a little rough around the edges, or being unable to scan a full A4 page so more is a nice kind of product for lowering a quick "rough-and-ready" photo or diagram to your PC. Prices on such beam scanners run between \$50 and \$100.

If you need better quality, a proper flatbed scanner is probably your best bet. These will allow you to scan full A4 pages at once, offer much improved image detail as over a beam scanner, and also much more precise scanning. You can expect to pay anything from \$500 to \$1000 for such a machine.

There is, however, another way which won't cost you nearly as much. If your fax machine has microchannel capability and if you have an external fax/modem already residing within your computer or department, you can just fax yourself the documents containing the image or photo you want to scan and then "fax" that image on to the recipient fax line where it arrives in your PC. □

See page 46 for more on fax technology.—Ed



"Gosh, I was in the middle of sending out the person who put me in jail when I was out of it."

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More and more software is becoming available on CD-Rom. The list of popular titles available seems to be growing daily. These days, people are using CD-Roms for everything from Education and Home Reference, to Desktop Publishing and Multimedia Presentations.

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Continued from page 51

the CCITT V.22bis modulation protocol.

On the other hand, two V.22 modems can talk to each other at 14400 bps. They do not live in the front-the-back communication. Two V.22bis modems can talk to each other at 14400 bps. A V.22 modem can talk to a V.22bis modem at 14400 bps.

### Things to come

V.42  
CCITT is working on a new modem standard, called V.42. If all goes well, the V.42 modem standard can introduce before 1993. A V.42 modem is expected to reach a raw speed of 20,000,000 bps over standard analog telephone lines.

### ISDN

In a couple of years we may see a new modem as well. Integrated Services Digital Network (ISDN) has been coming for years. When will ISDN really become available for the rest of us? It depends on your local telephone company. It is estimated that by the end of 1993 about half the telephone connections in the U.S. will have access to it. With ISDN you won't need a modem; data can go as fast as the data-carrying line allows. You will need an ISDN adapter card.

An ISDN line carries three digital channels, two "B" channels that carry most kinds of data at 64,000 bps and a "D" channel at 16,000 bps that can carry control

signals or serve as a third data channel. A single ISDN channel can transfer uncompressed data faster than a 14,400 bps modem. This makes data compression almost a waste of time. You will be able to transfer data at hundreds of kilobits per second. Eventually, ISDN will provide widely available, low-cost digital communications for voice and data communications. Until ISDN is finally in place, high-speed modems will be with us for a while.

### Error-control Protocols

Besides high-speed modulation protocols, all current models of high-speed modems also support error-control and data compression protocols.

### V.42

There are two standards for error-control protocols: MNP 4 and V.42. The Microsoft Networking Protocol, MNP, was developed by Microsoft. MNP is a data compression protocol. MNP is a data compression protocol.

V.42 was established by CCITT. V.42 actually incorporates two error-control protocols: V.42 and LAP-B (Link Access Protocol for Modems) as the primary scheme and includes MNP as the alternate scheme. Therefore, a V.42 modem will be able to establish an error-controlled connection with a modem that only supports MNP. A V.42 modem that uses a proprietary modulation protocol may also use a standard error-control protocol.

For example, Hayes' Smartmodem 300 supports an error-control protocol called LAP-B. Computron's Speed Modem Champ also uses a non-standard error-control protocol. V.42 or MNP-4 can provide error-control connections.

Modems without error-control protocols, such as most 14400 bps Hayes-compatible modems, cannot provide error-free data communications. The noise and other phone line anomalies are beyond the capabilities of two standard modems to deliver error-free data. V.42 (and MNP 4-4) copes with the phone line anomalies by slowing up the line rate and automatically retransmitting corrupted data.

If you have used a standard Hayes-compatible modem, you probably noticed some "garbled characters" (like "Wot," "aw," "a") show up on your screen from time to time. When this happens, establish an error-controlled connection, they are not to be a reliable link and are capable of starting up the garbled characters caused by the line noise. Notice that the last word is "line" noise, it just shows on the screen as your screen as the screen as the screen again.

The timing protocol used by V.42 (and MNP 4) is similar to the error-control scheme used by the standard protocols (such as MNP-4). The two schemes use a sophisticated algorithm to make sure the data received matches the data sent. It slows to a stop when the data is received.

When a line difference between error-control protocols (such as V.42) and the standard protocols (such as MNP-4) is that, the standard protocols provide error detection and correction only during the transfer. The standard protocols do not provide any error control when you are sending small messages or checking with other people online. In other words, an error-control protocol is "on" all the time during your online session and the standard protocols are "on" only some of the time, usually when you are sending or receiving files. Even though an error-control protocol is "on" all the time, we will need the standard protocols when two modems establish a reliable link.

A modem talks with its answer, during and after, it does not understand what it is. When you download or upload a file, your communications software needs to take care of the data received to the file. The standard, the file etc. Which caused by the standard protocol which does not have error control.

Some file-transfer protocols, most notably Xmodem and Zmodem, were developed to handle the transfer without performing any error checking. The use of using a protocol like Xmodem is to eliminate the redundancy that is required for the transfer speed. Xmodem and Zmodem should only be used with modems that provide built-in error-control protocols.

Three file-transfer protocols do not provide any error checking or recovery capability. If a problem occurs during the file transfer, the transfer session will be started. Protocols like Xmodem or

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## About Modems *and how fast they are*

Don't be fooled by the claims. It is extremely rare if any, that you will be able to transmit data at 10000 bps. In fact, V.42bis and V.42bis are not very useful when you are downloading files from online services. Why? Here's what the modem compression will depend on what kind of files are being transferred. In general, you will be able to achieve twice the speed for transferring a standard text file (like the one you are reading right now). Downloading a 50K message that you can delete (it's temporary on the line or less a 5000 bps modem can effectively transmit 10000 bps). V.42bis and V.42bis modems cannot compress a file which is already compressed by software. In the case of V.42bis, it will even try to compress a precompressed file and actually expand it, thus slow down the file transfer!

If you have ever downloaded files from a BBS or online service, you know that almost all files are in a compressed format. Therefore, you should only expect to see an actual throughput between 500 to 1500 bps even if your V.42bis/V.42bis modem is supposed to offer throughput "up to" 10000 bps. Most PC files are in the ZIP format.

Microsoft files are typically in the ZIP (usually) or ZIP (Compress Pro) format. Apple files are usually in the ZIP, ZIP or LHA format. Note that ZIP files are also in a compressed format.

**Compression by Software or V.42bis/V.42bis**  
There are several reasons why compression software programs (such as PKZIP or StuffIt) are superior to V.42bis or V.42bis.

1. Compressed files use disk storage space.
2. Compression software programs are more versatile. More of them allow you to group several files in a compressed file to ensure that all the relevant files get transferred at the same time.
3. Software compression is more efficient than standard modem compression. In the case of a small file, this may not make much difference. But the difference can be significant when you are transferring large files.

One-to-one modem compression does have one advantage: It is a one-to-one conversion. You can send a file without compressing it first, and the recipient does not need to decompress the file.

**Local Flow Control and Data Buffering**  
To get the most from a modem with data compression, you'll want to send data from your PC to the modem as quickly as possible. If the modem is idle and waiting for the computer to send data, you are not getting the maximum performance from the modem.

For example, you have a V.42bis/V.42bis modem and you want to send a text file to a remote system that also has a V.42bis/V.42bis modem. Let's assume the modem is idle as you send the file in 10000 bps using V.42bis. If your computer is sending data to your modem at 5000 bps, your modem will have to stop and wait to receive data from your computer. To get the maximum performance, you must set the computer to send data to the modem at 5000 bps (the maximum a V.42bis/V.42bis modem can achieve). Since the modem can only send the file to the other modem at 10000 bps, it will never have to wait.

However, there is a new problem. Since your computer is sending data faster than the modem can handle, there needs to be some way for the modem to ask the computer to stop sending data. Otherwise, data loss is sure to occur. This is where local flow control comes in. A high-speed modem typically supports two kinds of local

flow control: hardware handshaking (RTS/CTS) and software handshaking (XON/XOFF). Of the two, hardware flow control is the preferred method. We have mentioned earlier that there are three links involved when you are connected to a remote system.

1. The link between your computer and your modem.
2. The link between the modem and the remote system.
3. The link between the remote system and the remote computer.

Local flow control is used for the first and third links. Notice that the flow link connects the same kind of flow control to the third link. Hardware flow control (or hardware handshaking) works by sharing voltage levels on the RTS (Request To Send) and CTS (Clear To Send) signal lines on the RS-232C serial interface between the modem and the computer. CTS is used by the modem on the sending end of a transmission.

When the local modem is ready to receive data, it sends the CTS signal to the local computer and the computer starts transferring data. If the modem is unable to accept the data as fast as it is created from the computer, the modem will disable the CTS to inform the computer that the

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modern laptop is almost half as lightweight as modern desktops (typically weighing a small amount of RAM which is used to provide data buffers). The company will then suggest data transfer.

Over the local modem has erupted its leader by transmitting data to the remote modem. It will initiate CTS again. RTS is used by the computer on the receiving end of a terminal line. When the computer cannot accept data at the rate at which the modem is passing data, it will double RTS. The computer doubles RTS again when it is ready to resume receiving data from the modem.

Software flow control (no software handshaking) is achieved by embedding control characters in the data stream. XON and XOFF are the most commonly used control characters. XON is also known as Control-Q or DCR (ASCII 19) while XOFF is known as Control-S or DCI (ASCII 19). The use of XON and XOFF during data transfer can create problems when a binary file contains the Control-S (19) character as a legitimate part of the data. We use the method of 14 and 19 are part of the transmitted data.

#### Modem and High-Speed Modems

If you use a Modem with a high-speed modem, you will need a special modem cable that is wired correctly to support hardware handshaking. You can order the cable from most mail-order companies that sell high-speed modems. I put mine from Hayes Computer (1-800-541-5114) for \$10 (plus \$2.50 for shipping is included).

#### PC and UART (8255, 8250, 8250A)

New PCs serial port have UART (Universal Asynchronous Receiver/Transmitter) chip to control the input/output. The AT usually has an 8250 UART, the AT usually has a 8250 UART.

If you are running Windows, Douglas,

OS/2 or any other multitasking environment, you should upgrade your UART with the 16550 (if your PC does not already have one). The 16550 is standard in most IBM PC/XT and many IBM-based computers. The 16550 UART has a 16-byte FIFO (first in, first out) buffer that helps to prevent degradation when several programs are running at the same time. If you can use an external modem, the UART is in your computer rather than the motherboard or on an I/O card that has the serial port.

If you use an internal modem, the UART is on the modem. Check internal modems from ProData Technology and Datacube for 16550 UART. The Telexcom 1642 has a 16550. The Compaq Compaq SpeedModem Champ, due to its unique design, does not use a standard UART.

Even if you have a 16550 UART, the communication software that you use will need to support it. Fortunately, the most recent versions of popular communications programs are all designed to support the 16550 UART.

#### Hayes BPP (Enhanced Serial Port)

Hayes modem an adapter called Enhanced Serial Port (ESP) that has two serial ports together with an upward expansion. The ESP can use your PC's UART from having to manage the serial load. If a 16550 UART is not good enough for you, the ESP may be the only answer.

#### Buying a High-Speed Modem

V.11 and V.120A modems are clearly the standards of high-speed modems today. You should buy a V.11 or a V.120A modem.

1. Most applications require a high-speed modem with a proprietary modulation protocol. In this case, you should consider a dedicated modem that supports both the proprietary protocol and V.11 (or V.120A).

2. If you cannot afford a V.120A modem, in this case, you may choose for a high-speed modem in the CompaqSpeedModem Champ. Should you pay the extra for a V.120A modem? A V.120A modem is faster than V.11 modems but it also costs more.

#### Should you pay more for the speed difference?

This depends on two factors: what's the price difference, and how do you want to use the remote system. If the price difference is \$20, I would buy the V.120A modem, but when it's the price difference is \$200, assuming the remote system supports V.120A, a V.120A modem will pay for itself rather quickly if you are printing long-distance calls to the remote system. However, it may be more cost-effective for you to use some packet-switching service to reach the remote system by using a local number. A V.120A can then will be used as a means of the packet-switching service currently supports V.120A. In fact, they are just starting to offer V.120A data services.

#### Should you buy a modem with a proprietary modulation protocol?

With the exception of the CompaqSpeedModem Champ, it is generally not a good idea to purchase a modem which only supports a proprietary modulation protocol. If you have to connect to a modem that uses a proprietary modulation protocol, you should consider getting a modem that supports that modulation protocol (IBM Century Line Standard, Telebit 3100 or 3000, Hayes Champ).

#### Should you buy the SpeedModem Champ?

Certainly cost much less than most the best-performing general V.120 modems in the market today.

Assuming the system you are calling supports both V.11 and the CompaqSpeed

Champ modems, should you save the money and buy the Champ? Unfortunately there is no clear-cut answer to the question. The answer again depends on how you are going to reach the remote system. If you want to reach the remote system via a packet-switching service, the CompaqSpeedChamp may not be a good choice. The CompaqSpeedChamp is generally not supported by packet-switching networks (the only company that supports the CompaqSpeedChamp is Genscom USA).

As a result, you will only be able to connect to V.120A via the packet-switching network. You would be forced to place a long distance call if you want to connect to V.120A.

#### Should you buy a 16550 data modem with V.120A?

If you are thinking of purchasing a 16550 data modem with V.120A data compression, then again, we have mentioned earlier that V.120A and V.120A-1 are useless for downloading compressed files. There is one more reason why a 16550 data modem with V.120A is generally not useful when you are calling commercial online services or BBS. Online services and BBSes usually have separate phone numbers for 16550 data and high-speed modems. Many of these do not support V.120A or have 16550 data lines. Therefore, you won't be able to make a connection with V.120A if you call their 16550 data modem line.

Conclusion: I may call their 16550 line instead. Well, not only 16550A online services, as well as many bulletin board systems, typically do not allow you to call their high-speed modem line with a 16550A modem. You may be able to make a connection even if you try. But, should seriously consider the CompaqSpeedModem Champ instead of a 16550 data modem with V.120A. The CompaqSpeedChamp will probably give you much more for your money.

Continued on page 58



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**Enabling the Initialization String**

If the initialization string provided by your software does not work (or if your software does not support your modem at all), you'll need to edit the initialization string in your communications program. This modem initialization string consists of a series of commands (called the AT command set). You will find descriptions of these commands in your modem's manual.

**Modem Software Settings To the Modem Settings**

Besides using the right initialization string, you also need to make sure that the settings in your communications program match those of the modem.

**Speed setting**

If you have a modem that supports data compression, you want to make sure that the speed setting for the modem in your dialing software is the maximum throughput. Here are the general rules of thumb: For a V 120/V 4500 modem, set speed to 18000 or 17000 bps (check your modem manual). For a V 30/V 4500 modem, set speed to 18000 bps. For a V 30/MNP-2 modem, set speed to 10000 bps. For a V 1000a/V 4500 modem, set speed to 1800 bps. For a V 1000a/MNP-2 modem, set speed to 4800 bps.

**Note:** Your computer may not be fast enough to work reliably at 18000 or 17000 bps. Also, the communications programs you use may not support speed higher than 10000 bps.

**Hardware Flow Control**

Make sure you will need to configure your software to use hardware handshaking if the modem is initialized to use hardware flow control.

**Enabling Time-out Value**

Before making those two modem settings, your software may also require a time-out feature to set for a connection. If you initialize the modem with the command `ATZ000`, you'll need to change the time-out value used by your software to 30 seconds accordingly.

**Other Settings for Your Communications Software****Telephone Numbers**

Cellular services use different phone numbers for different kinds of modems. To get the best throughput, make sure you dial the right phone number. Note that many business board operators do not allow calling their high-speed modems lines with 1000 bps modems. This would be disastrous.

**Call Waiting**

Call waiting service will disrupt modem sessions. If your telephone line supports the ability to disable call waiting, set the dial string `ATDT*70`, make sure you add the comma (,) instead of ATDT. `ATDT*,0000000000` Also, adding 1170 after the 0000000000 command can be used to disable call waiting on some push-button phone systems. Check with your phone company to see if these features are supported.

**RS-232 or EIA-232 (Also Misnaming RS-232)**

In general, use the parameters in RS-232. If you are calling a commercial cellular AT9000 (such as GTE's), you may need to use the parameters in EIA-2.

**Half vs. Full Duplex (Send Rates)**

The only popular cellular service that uses full duplex is GTE.

**Terminal Emulation**

If you are using an IBM compatible, choose IBM PC or ASCII. Otherwise, try VT100, VT100/VT52, TTY.

**Comm Port**

For your computer to talk to your modem, you need to tell the software where to find the modem. If you use a PC with an internal modem, you need to specify what I/O port the modem is connected to. If you have an external modem, you need to configure the software to find the software which COM port the modem is configured for. If you use a Macintosh, specify which port your modem is connected to the modem port or the printer port.

**File-transfer Protocols**

Errors that occur during the transfer are automatically detected and corrected by the transfer protocols. If a block of data is received incorrectly, the receiving system

sends a message to the sending system and requests the transmission. This process is automatic. When errors occur during file transfer, the communications program shows an error in the file-transfer status window.

**ASCII**

This is designed to work with ASCII text files only. However, you do not have to use this protocol when transferring text files. The ASCII protocol is useful for updating a text file when you are comparing several values.

**Senders**

Senders is one of the most widely used file transfer protocols. The original Senders protocol uses 100-byte packets and a simple "checksum" method of error detection. A

later enhancement, Senders/CRC, uses a more secure Cyclic Redundancy Check (CRC) method for error detection. Senders protocol always attempts to use CRC first. If the sender does not acknowledge the request for CRC, the receiver shuts in the checksum mode and continues to request for transmission. Senders-10, Senders-15, or eventually Senders CRC with 16,000-byte packets. The same options and built-in boards may also be referred to as Senders. Some communications software programs, most notably Procomm Plus 1.0, also list Senders-10 as Windows. Procomm Plus 3.0 no longer refers to Senders-10 as Windows.

Continued on page 60

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## The Computer Paper **BBS** Listing

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## MacWorld's Adobe Premiere

**BIT OF SHOW**  
SAN FRANCISCO, CALIFORNIA, JAN 14 (ENR)—Adobe's Premiere and Apple's QuickTime shared the spotlight in this year's MacWorld. MacWorld magazine's award program, which allows you to vote for digital "winners" on the desktop, is shipping new and future vote demand in March.

The software holds the promise of replacing complex and expensive video editing software systems on video production houses, but the elements in these programs and its progress to do this have not all been put in place, according to Adobe. The main problem is a lack of sufficient tools. "Because current commercial video editors or knowledge you can perform some moderate video editing, it can be used, however, to perform video editing, or the determination of what can be achieved, and where most, should be understood."

Adobe says, however, that the release of Apple's QuickTime is being slowed, since all institutional inputs are confined to one manufacturer order to be approved.

QuickTime is an integrated system of software's QuickTime, a digital video-editing software product developed last year. Adobe acquired rights to the product in August, 1991 and has worked with Apple to use its own software development. Recently, Randy Utter, who developed QuickTime, has been hired by Adobe.

The QuickTime was developed in collaboration with the Video Group, Apple's Macintosh computer software division, which most similar bit of the data.

MacWorld's award of the new version of MacWorld's Macintosh with a digital video clip prepared with Premiere. Other clips prepared with the program, were in

addition to many other video production programs, were in the study.

Premiere costs \$249.95 when purchased alone, at a better price, however, in the bundled SuperMac/Adobe deal. For a limited time, Premiere costs less when purchased with the Video Group for the LG or II (1990) or the Video Group for Video Macintosh (\$249).

Premiere allows users to combine video images, audio recording, animation, still images and graphics in video digital movies on the Macintosh. The product is based on QuickTime, Apple's newly created standard on the system 7.0 QuickTime also came to include and distribute such video and animation on the Macintosh platform as only a few files can be transferred. Premiere displays video in "Window" style, allowing the user to see different clips for different video sources, special effects, superimposed video, and audio tracks.

Adobe lists the minimum hardware requirements for Adobe Premiere software as a Macintosh II computer with four megabytes (MB) of random access memory (RAM) and a hard disk drive. Adobe is handling QuickTime version 1.0 releases with Premiere—animation which has only recently been released in Apple. Premiere also requires the QuickTime version 1.0 or later, but will not Adobe use a QuickTime-compatible, digital video capture board is recommended.

Contact: Ted Greenberg, Adobe, at 510-514-4400. Fax: 510-514-3333.

## MacWorld: Panelists Debate Apple's Future

**MAC FRAMING, CALIFORNIA, JAN 14 (ENR)—**A lively group of distinguished panelists met in San Francisco to discuss the future of MacWorld's San Francisco.

The group's recently announced plans to meet the consumer electronics business, Bruce Corbin, editor of Digital Media, reflected general opinion that Apple has to work out on for it. What the observed "Apple is up against a whole world that doesn't understand digital technology."

Apple Computer CEO Steve Jobs announced at the Consumer Electronics Show that Apple would be offering "TDA" or "personal digital systems," in which CD-ROMs can get used to the Macintosh or the consumer market in 1994. He said of the new device as to enter under the new digital, rather than using technology.

Tom DeLonge, analyst with Creative Strategies, suggested that if Apple were to go alone into consumer electronics, it is much more as a company, "it would fail." He added, however, that "Apple's work is to create a special device or work with Sony to build PDA." He suggested that Japan's firms already have consumer electronics superior.

Jobs agreed that Apple and the rest of the US electronics industry should keep making time-reversing technology that already exist, and should focus more attention with overseas companies, mainly Japan. Citing the success of Chrysler in its

example of a joint approach to create digital capabilities, also said if Jobs was working in the consumer business, "it would be better."

The focus of the MacWorld, through the contemplation of this show and Apple's new, appears to be directed to future steps, taken on the part of Jobs and publisher of PC letter "The Mac world is where the Apple II was when the Macintosh was introduced in 1978." That was the start of the decline of the machine, as explained by Jobs, which showed Apple's first operating system, showing how to be more than that, along with, "There are probably people in the audience saying 'what's the Apple II?'"

Jobs said Apple will most likely not upgrade the Mac line much more as Apple's future lies in newer technologies, a new operating system, and a hybrid machine being created with IBM. Don Parker, editor of Macworld, and for Apple, said that the Macintosh II will probably reach the market, but only when the time comes, replacing today's Macintosh Classic, is a multi-million dollar.

Apple's recently announced focus with IBM, just approved by the government, drew the hottest debate. "It may not pull it off (the alliance) or may have a package that will have more of it in the future," especially those of us who like to open," said Don Parker, in a comment which drew a few laughs. Parker pointed the modernism behind the alliance, explaining that Apple and IBM gave agreement to check the Macintosh market toward customers in the market with Windows now face.

He concluded that despite the talk about the new computer's corporate and cultural differences, they are "more alike than they are different."

—Wendy Black

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**New For Mac: Anatomist Teaches With HyperCard**  
**GRAHAM'S LANDING, INC. JAN 7**  
 (MSW)—Pulsar Design has announced Anatomist, a human anatomy teaching and reference tool which mimics Apple's HyperCard software.

Anatomist, the corporate illustration, speech, reference tool, and personal software in a hypermedia format, the developer claims "is based on material from The Human Coloring Book, by Peter Rapp and Lawrence M. Roth, Ph.D., and is designed to complement the process of medical education."

Lynne Bradley, one of the two principals in Pulsar Design, told Developers her company uses three main markets for the software: the first is medical education, including hospitals, university anatomy classes, and second is public school systems, and the third is the professional reference market.

Commenting on the package's appeal to children, Bradley said Anatomist gives the software an "easy to use" feel but is fun enough. "They love to look their parents' and old teachers' old anatomy text at home and use it," she said.

The software includes more than 300 illustrations and more than 1,000 anatomical terms. It provides spoken pronunciation of terms. Developer text is available to request on the diskettes.

Bradley and Pulsar are plans to market the software worldwide and have been recipients of awards from South America, Europe, America, and Japan.

The suggested retail price is US\$199. Anatomist requires a Macintosh with no employees at home, a CD-ROM player, and HyperCard 1.1.

Contact: Lynne Bradley, Pulsar Design, 694-696-6961.

**Apple Plans Aggressive Multimedia, CD-ROM Push**  
**TORONTO, ONTARIO, JAN 24 (R)—**

Apple Computer is about to get more aggressive about promoting multimedia, according to P. H. Wolfson, assistant development manager for media integration and consumer products at Apple Pacific.

Talking at a group of journalists, Wolfson said Apple Pacific is adopting a policy of "CD-ROM promotions," aiming to get as many computer club and only getting players in people into the hands of its customers the belief that this will break a vicious circle that has delayed the widespread adoption of multimedia.

Multimedia is the combination of data, text, video, graphics, audio and more. It frequently refers to CD-ROM as a storage medium because of the large capacities needed.

Wolfson said that to date software developers have been slow to produce CD-ROM titles because they believed there were too few CD-ROM players in use to make a viable market. Computers, multimedia, and now being buying players today there were very enough titles to make them viable.

Wolfson also mentioned that more than 500 new desktop products will use the technology in its 1992 release. The software software companies that release their titles will have to manipulate optical, video and software files more or less as they do graphics and text.

Packages supporting QuickTime include graphics and packages such as Adobe Photoshop and Pictura's Graphics, education applications such as Real Fun from Interactive and Britannica's BookShare, and word processors such as WordPerfect and Microsoft Word, and multimedia reference products such as Adobe's Premiere and Don't VoodooShop.

Contact: Peter Wolfson, Apple Canada, 1-800-555-6001.

## Apple Tops In Two Canadian Surveys

**MARRIOTT, ONTARIO, JAN 24 (R)—**Apple Computer is developing one of the world's most important reports that come to products appear in both user opinions and consumer satisfaction in the Canadian market.

The latest Nielsen Computer Products Institute, in which Nielsen Marketing Research measures and rates computer equipment through consumers, said Apple was number one for the 1991 consumer two-month period, ranking October 31, 1991. Nielsen named the Macintosh Classic the top-selling personal computer in Canada for the 11-month period from 1990 to January 1992. The Macintosh IIx placed third.

Earlier in January, J.D. Power & Associates published the results of the Overall Business Personal Computer End User Satisfaction Study. One of some 35 computer, printer and software brands, J.D. Power gave Apple the highest satisfaction score on a rating based on a survey of nearly 1,000 business PC users in more than 1,000 sites across Canada.

J.D. Power's study rated products on a number of attributes related to user satisfaction, giving Apple highest marks on satisfaction, support, capability, reliability and software functionality, as well as its overall satisfaction.

Contact: Tracy Smith, Apple Canada, 1-800-555-6001.  
 Apple Computer, 1000 Apple Point Place  
 Cupertino, CA 95014, 415-966-0000, fax 415-966-0000.

## Bell-Arcis To Provide Canadian Wireless Net

**MONTREAL, QUEBEC, FEB 4 (R)—**Bell and Motorola Canada have announced their wireless data communications network pilot venture and expanded its coverage by having Bell Canada's parent company IBM Canada will be the largest customer of the newly named Bell-Arcis, formerly called Motorola.

In the United States, IBM and Motorola are partners in the worldwide Arcis network. Now, in Canada, IBM will act as a distributor in Bell-Arcis, but will have a joint marketing arrangement with the company. IBM's subsidiary IBM Mobile is now 50 percent of Bell-Arcis and Motorola Canada the other 50 percent.

IBM is also parent company of Bell Canada, Canada's largest regional telephone company, and Northern Telecom.

Alvin Roseman, president and chief executive of Bell-Arcis, told a financial press conference that the acquisition of Bell's private network would allow his company to expand on services from the current provision of Datastream Quebec to all of Canada.

The Bell-Arcis network is now able to reach about 24 million Canadians, providing Bell and Motorola companies and customers can exchange data among themselves and with company systems using the network. The Bell-Arcis network in Canada is linked to the Arcis network in the United States, which has nodes in more than 1,000 cities and towns, Roseman added.

John Smith, president and chief executive of IBM, and the announcement of Bell-Arcis, "will make us the world's largest of technology that Bell already provides in this area." Bell's wireless communications interests include cellular telephone and paging services as well as telephone services on computers.

Arthur Goss, vice-president and general manager of Motorola Canada, said wireless data communications will be important to many businesses. "In our opinion," he said, "the current use of data services of most businesses is at a rudimentary level, and yet, North American data communications."

Bill Thompson, president and chief executive of IBM Canada, said the company

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to control the hand movements and speech of a high-resolution, computer-generated character with his/her own hand movements and speech. Synagraphix, developers of the dslip, took Kenderlin behind the curtain.

Representative Jerry J. Spolansky said he, along with a Digital Media White from The Character Shop attached to his hand and took Spolansky and hand gestures in motion and microphone hidden near the telephone screen when Matis appeared. "Matis was a combination of wires and electronics controlling all over Cople's hand and shoulder that made Matis imitate his facial movement. Cople said a mouse is not hand that moved Matis, so Matis got displaced with an executive, he would learn for look on them."

A Silicon Graphics IRIX VAX Workstation running a Performance Automation System did the digital animation, interpreting the signs from the White. The Character Shop was from California. It was also digital animation, graphics and is responsible for the animation of the character from the film from the movie "Apocalypse."

Of course Japanese firms were in the show as well and received more media attention after the publicity U.S. President Bush gave them the previous week with Japan. While Japanese products in most of the industries of the consumer electronics industries, it seems they do not have a foothold in the stereo speaker industry, or in the computer software industry.

Audio speakers, it seems, are the main of the U.S. in stock and still require a speaker with a dynamic range, because line engraving, and more efficiency in play levels, says Bruce Pender, a consumer electronics analyst quoted by the Associated Press.

Computer software is another main US companies have shown relatively, and that was just related to CES.

Further, while the economy is still suffering the most serious economic factors, a leading one was computer in other sectors of the economy, and French firms, chairman of IBM, and speaker in the opening minutes of the CES.

The last major topic at the show was in an American and others who strongly advised the American already exposed by the major computer word stores like CompUSA and ComputerLand. Beyond stores in the pooling further growth in the remaining home office market.

Spolansky from IBM, Synagraphix, an IBM subsidiary, the CES 1992 show.

## Technology Forecast

Based on the statistical reports to proceed to move to 30 per cent over chips during the next five years. Most people agree the will come more confusion in the marketplace. Most computer makers will settle on two or three chips selected from the Intel 386. These new chips will be comparable to Intel 386 and 486 designs. At the same time Intel is expected to cut the price of the 386 chips by another 20 to 30 per cent. This will place their price at half that of the 4860 price. It is likely Intel will be offering several complete 486 CPUs.

It has been questioned that Apple may discontinue the Original Classic in the next time it enters the Macintosh 145 in the 48600 chip. This would make the complete product line consist of 48600 and 48645 processors. In the Classic is designed, the price of used Macintosh 145s and Macintosh Plus could rise.

John Kenderlin is the president of the American Computer Exchange, which teaches buyers and sellers of used microcomputer equipment. For more information contact the American Computer Exchange Corporation at (800) 364-0717.

—John Kenderlin

## NAL Celebrates Birthday

UBERLAND, ILLINOIS, JAN 10 (AP)—The nation of the year of January 12, 1992 brought commentary throughout the media concerning the "birthday of NAL," the computer firm 1991.

Representative Jerry J. Spolansky said he, along with a Digital Media White from The Character Shop attached to his hand and took Spolansky and hand gestures in motion and microphone hidden near the telephone screen when Matis appeared. "Matis was a combination of wires and electronics controlling all over Cople's hand and shoulder that made Matis imitate his facial movement. Cople said a mouse is not hand that moved Matis, so Matis got displaced with an executive, he would learn for look on them."

The arrival of January 12th, cannot Digital Fun International and the New York Times to denote feature stories about 1991 and its relation to both the previous state of computer technology and what may come in the future.

Both glass-pane material in using data as an a long way from developing the type of independent decision-making computer system that the future of computer use. The DFI quoted Clarke as saying, however, that NAL's computer system is a significant improvement in just "an immediate step in the development of real intelligence."

In the January Times piece, writer John Madoff also refers to the computing story that the term NAL was a "highly visible reference to IBM." However, even when NAL, presents data to IBM by it. Madoff quoted Clarke as saying: "I've been trying to get this right to run for the past 30 years."

Clarke himself in the NAL article only for what was originally intended "immediately pronounced significant computer technology."

—Richard H. Madoff (John F. Madoff)

## Super Intron New 532 DataFax Modems

ALBANY, OREGON, FEB 9 (AP)—Super DataFax has introduced a new computer V.32 modem with data, fax capabilities and other new features.

The SuperDataFax V.32 Modem can transmit computer data at fastest speeds up to 14,400 bps, while the SuperDataFax V.32 fax handles data and the modems up to 9600 bps.

The V.32 Modem costs a suggested retail price of \$299.95, while the V.32 fax is \$299.95.

Both machines, which are housed in compact cases measuring 1.5 x 4.5 x 5.5 inches, recognize Class 1 and 2 fax modems, and have the ability to send and receive faxes directly from the computer. Fax modems support data compression and error correction protocols, including V.42bis error correction and V.42bisbis error correction. The V.32 Modem, and 38,400 bps for the V.32 fax, and 38,400 bps for the V.32.

An answering feature in the V.32 voice display which includes a digital clock, fax. The display can show up to 32 different status messages, replacing the traditional lights found on many modems.

Other features of the new modems include support of voice and other fax. The voice feature, which will be available in mid-1992, will use the same compression software used in sending, allow the modems to send and receive digitized voice, as well as compress and decompress user data.

Super data fax voice feature will also provide and recognize both voice and data. The V.32 Modem can also operate on the quality level desired. The voice feature is designed to support very high, answering machines, and digital modems.

If your phone service provider implements digital ID, this feature will allow the user to dial the number from which the incoming call was placed, so the user's phone. Super says the V.32 Modem is ideal for secure communications, remote identification of incoming calls, and

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VANCOUVER 225

**Table 1**

Sage's officials say they are particularly pleased with the pricing of the two models, which they say is possible due to innovative design and the Red Bull Chip can cost. "We are very excited about the price we're paying and our customers' benefit from these very affordable prices," said Sage president John Miller.

On-line and software kits for IBM and compatibles, as well as Macintosh systems, are available. Super says PC-based models will also be available soon.

The Mac packages are compatible with System 7, and include HCLed file servers, Microphaser page-maintenance software, a Computer Information Manager screen kit and software.

The LRM is not available in DOS and Windows versions. The Windows version

includes Windows, a big multimedia/creative program for Windows. The communications software comes with the Windows package, since Windows has its own communications software. Other packages include WinFax software and the Internet communications program. Such software has AT command compatible, automatically adjust to the line protocol and data transfer rate, and have an auto-dial/dial-back feature.

Supra says most of our SupraMedians are upgrade to current packages. For more information about upgrading or about Supra products, call 1-800-368-3636 or 616-291-1111.

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# New For PC: Adobe Illustrator For Windows

ILLUSTRATION VIEW CALIFORNIA, JAN 28 (AP)—Adobe Systems has announced Adobe Illustrator 4.0 for the Microsoft Windows.



The Windows version of Adobe Illustrator is very much like the Macintosh version, said Mike the Macintosh version is primarily aimed at professional illustrators, Adobe said.

Adobe has now focused in the Windows market including adding to picture mode, improved glyphing capabilities, improved vector support, fill, cross-hatching, better alignment tools, and support and export the support. The company said the time it takes to load files has been significantly reduced in the new version and the software has been optimized for performance with both 286 and 386-based systems.

Adobe is offering in Adobe Executive 3.0, Adobe Type Manager (ATM), Adobe Typepaths, and Adobe InDesign software programs with 40 operators and patterns, various options, and features from the Adobe Calibri/Color Manager with the new version 4.0 of Adobe Illustrator 4.0 for IBM. The Illustrator 3.0 product will only be available with Adobe Executive 4.0 for the first 60 days after its release, the company said.

Adobe Illustrator will be available in the second quarter of this year from authorized Adobe dealers.

Source: Lotus Office, Adobe Systems Inc. (415) 526-7000, Jan 28, 1992, IBM.

## Microsoft to Certify PCs for Windows

SEATTLE, WASHINGTON, FEB 3 (AP)—For some years now, class makers have advertised their PCs as "IBM compatible," but this standard could mean big changes.

Microsoft Corporation has announced that it is offering the 100 hardware suppliers whose PCs run Windows programs the use of a "Windows certified" logo. The offer included IBM. If the offer is successfully accepted by the manufacturers, the criteria could change to "Windows compatible."

Microsoft said the logo can be used to verify that a computer is a machine that runs Windows-related software.

"The primary message is no longer the IBM PC because the IBM machine is no longer compatible with themselves," said Roger Work, marketing manager in the retail systems unit.

Microsoft said it will hold a conference for personal computer makers in San Francisco, March 1-4, to talk off on the new Windows, controlling the industry standard. "We think Windows is becoming a very strong and powerful brand name for customers—they look for software that is Windows compatible, and they look for the machines that run Windows very well," said Microsoft spokesman Steve Tamber.

Microsoft said it has already signed up three manufacturers: PC makers Digital Equipment Corporation (DEC), Sony Corporation (Japan) and Dell Computers—as well as several others.

The Windows certification program for hardware has the potential to widen the class between desktop class hardware and IBM, noted when the two giants went separate roads regarding operating systems. Microsoft agreed with DEC-DEC, while IBM signed their OS/2, promising it would run Windows better than Windows. "The message of OS/2 is opposed to IBM, while Microsoft is opposed to release its own

version of Windows, Windows NT, about the same time.

Industry sources estimate that IBM now has only about 10 percent of the nearly \$20 billion worth of IBM-compatible personal computers that sold in 1990.

An IBM spokesman said that IBM is also considering the use of an OS/2 logo, which might make marketing systems. He said IBM has been working with numerous hardware manufacturers to gain broader acceptance of OS/2.

"What's important to understand is the support of the hardware," said Windows. That's not possible in a, and, and.

Source: Microsoft Canada, (416) 596-0000

## Spreadsheet For Windows Wars Continue

SUNNYVALE, CALIFORNIA, (AP) 3 (AP)—In a closely contested market, the major software companies producing spreadsheet programs—Lotus, Borland, and Microsoft—continue to battle it out, because in the Windows environment, in the past month, held at the Office 90 show in San Francisco, California, and in the Office 90 Pro for Windows product, said in previous testing, said.

Borland and Quattro Pro for Windows was compared against Lotus 3-2-1 Pro for Windows and Microsoft Excel 4.0 for Windows in three categories. The three programs were tested on a 386 and

forwards, spreads and graphs, and scores. Quattro Pro scored higher in the first and second categories and tied in the third category, Borland said.

Quattro Pro has 900 has been doing quite well against Lotus (3.5 for 3.0) The Financial IBM Compatible Users Group, one of the largest IBM user groups in the U.S., had both products in its year for a "three star" vote by vote and feature by feature, and said the product was hands down.

Lotus is in fact in the market of a "three star" vote against Borland in regard to its scores in the Quattro Pro for 3.00

Continued on page 87

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## MICHELENGA'S VIEWS

**The Michelangelo Virus Port Of Disturbing Trend**  
LOS ANGELES, CALIFORNIA, JAN 30 (ENR)—Computer viruses have been around since computers were introduced, but the reality is that it is important to be keeping abreast in the problem. Disturbing is another computer term, is producing an impact in the means of virus attacks in American businesses in the Internet or Intranet.

In studying the computer virus problem, Disruptor said that of the 500,000 computers in the survey, 12 percent were reported to have experienced a virus encounter, with some percent, being appearance of a virus "disruptor" (disruptor defined as a virus affecting 75 or more PCs or servers).

Dr. David Song, research director for the DISCIS, an organization that focuses itself on detection of computer public understanding of computer security related issues explained, "We are currently keeping track of about a thousand different computer viruses. With the estimates of the virus problem it is expected that only 10 percent of the PCs represented in the survey have not virus products installed."

Andrew Haydon, director of Disruptor's Computer Technology, said "Given the present industry trend toward increased effectiveness of the virus, we anticipate an increasing rate of growth in the occurrence of virus attacks."

The virus recently isolated virus is the Michelangelo virus, named after the famous

## MICHELENGA'S VIEWS

## Adobe Streamline 3.0 Converts Bitmaps To PostScript

MILWAUKEE, WIS., CALIFORNIA, JAN 31 (ENR)—Adobe Inc. announced Adobe Streamline 3.0 for Microsoft Windows for converting color and black-and-white bitmapped images into PostScript files.

Adobe mentioned the new features in Streamline in early image-processing tools, more color support, a better interface and automatic color management with Adobe Illustrator for Windows, and the ability to export graphics to popular file formats.

The choice of which of the conversion methods to use from the three available in the product depends on the type of image being converted, Adobe said. Conversion is based on differences in color and intensity and is primarily for images where strongly defined colors, like photographs.

Meanwhile, a second conversion, divides the color spectrum into equal parts, Adobe says this is particularly useful where the image contains a variety of colors or subtle color gradients.

The third conversion type, combination, allows a user to selectively choose from 124 colors or 10 grayscale colors from the image black and white.

Preprocessing tools help the user select and store images before conversion. A mouse click on the "image wand" stores any specific color or grayscale area for conversion or color adjustment, and any color selected with the mouse can be used and applied elsewhere in the image. This is useful for example, in creating new photographs, so color that just

be selected by clicking on one in the photograph so that color can be used to match up around the image without the user having to create or match the color.

The adjustable red, green, and blue levels are used point to correction, to add lines of any thickness or to erase parts of images, Adobe said.

After the conversion, preprocessing tools allow users to convert and adjust the output curves converted from. Sample images. Various editing options, such as extending paths by 100 color and stroke weight, allow the user to substitute any pattern or custom colors for the colors of the original image.

Adobe added that preprocessing tools may be selected with an automatic color picker within the paint style dialog box, by choosing percentage of process color, or by selecting a color from the original image using the eyedropper tool. A line-to-line-to-line feature allows the production of personal or company-based fonts. The software is also useful enough to create a thin screen slightly off to create, perpendicular, vertical and horizontal lines. Adobe says use a consistently rounded during this process.

General research can be expanded to HTML for presentation graphics. PDF for computer-aided design (CAD), Web for Windows, mobile applications, and HTML for photos, Adobe said.

Contact: Lyle G. Adams, Adobe, at (415) 534-6000, or (415) 534-6000.

## Continued from page 79

profession that displays a virus in the Lotus 1-2-3 after DOS boot.

Microsoft was accused that it placed its security based on it was an unclassified Lotus account. The virus was designed to convert Lotus users to Microsoft Windows.

A machine is a series of bytes that can be stored and played back to edit the example, a virus could be created that would save the current spreadsheet, then print it, simply by pressing two keys. Changing machine can be created which pass for signs by the user, display graphics, perform actions of the spreadsheet, and every other function which can be performed manually. From micro software has been more complex viruses, which they might be reluctant to encounter in a new program.

Microsoft is actively seeking Lotus 1-2-3 users to use who the new version of Excel, some in previous testing. Microsoft files for Windows with Lotus more capability is expected to ship in the first half of this year.

Those who wish to send in Lotus macros for testing should send them to: Micro Software, Microsoft Corporation, One Microsoft Way, Redmond, WA 98073. Those who prefer other name and address in submitting a qualifying macro will receive a copy of Microsoft's International Book for Windows, Microsoft said.

Microsoft has announced in Quarter Five for Windows program will ship in the first half of this year to end.

Contact: Catherine Hays, Microsoft, at (206) 433-0001, or (206) 433-0001. Microsoft Canada, at (416) 291-5444.

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Remains the same. The virus was distributed exclusively by floppy disks from one computer to 100 computers in two weeks, December 10 and 11, 1979, and progressed to destroy the information on the computers had this on the virus's birthday, March 6.

Leaving floppy disks as the only computer that has built a virus protection. Computer Data Professional, a Phoenix, New Jersey-based mail order hardware distributor had an outbreak of the virus prior, around the same time last year in that case. Visual Ready Laboratories (Detroit) also suffered from the virus because VRL bought a computer the development work from the New Jersey mail order store.

New York had similar problems with the threat of a virus distributed on its computer networking network John Mollen of Mollen Associates, a computer data processing and software company, told Computer Data Professional that the virus had been in a transmission rate. Mollen says he got in late last night a word from hardware or software vendors who have distributed a virus to users.

In the case of Leaning Edge and Computer Data Professional, the Microangelo virus attacked the new computers in the preparation of the hard disk for "going and play" to users would not have to the downloading and installation of the computer's operating system.

Microsoft, which supplies the operating system (DOS) and the program Windows to computer manufacturers, says it has begun licensing DOS and Windows on 386/486 computer manufacturers in such a way that the computer, do not need to give the user disks, but can install the operating system on the hard disk and

provide manuals. The virus is prepared to do so and will be changed for the CD-ROM, but ultimately, is not finished.

Installation in the computer virus field, any computer virus can be a general category, but all more specifically into micro-manipulation. One category, however, specifically means software that is simply poorly programmed and therefore damage a user's data.

A program classified as a Trojan Horse is a program designed in a useful one does not do anything else. Other programs or other graphics that are the system used to control a Trojan Horse. A Trojan Horse does not damage data immediately after the program is started but the user's computer because the program leads into the user's memory and while the user's hard disk data is being destroyed, displays with displays of moving graphics on the computer monitor.

A computer virus is more specifically defined as "programs" that modify other programs to activate an executable and usually almost copy of themselves. Easy to do and difficult to detect, virus programs occur by inserting copies of themselves into, updating their data, or creating their own or other executable files. No. Baidu and Leaning Edge is the best. The Computer Virus Database.

A virus needs access to the computer's current processing unit (CPU) to do its dirty

## The Michelangelo virus is activated when the computer's system date is the artist's birthday, March 6.

work. Therefore, it is not a virus that is installed in a program that is installed, such as the operating system files in the computer's base system. The program is able to do this in the drive between one logical disk and another on a single large hard disk, or program that has stored data in the CPU—like programs with the program on 320, 1000, or which themselves, to the

user's data, the latter program in a stand-alone program of a computer. This, because data files do not have their own data in the CPU.

The Michelangelo virus is believed to have originated in Europe in the Spring of 1981, says the Computer Virus Information Association (CVIA). A later 1982 personal computer (PC) and computer, and particularly the hard disk drive partition table and the last sector on the floppy disk, data.

The virus is spread by loading from memory or floppy disks, the CVIA says. The CVIA says most found the virus because in the computer's memory, not in memory (RAM) and random data in other files each day 3000 computers are used or executable programs are stored.

The virus is activated when the computer's system date is the artist's birthday, March 6. When activated it corrupts loss of all information stored on the hard disk. The loss is irreversible, the CVIA says. On floppy disks, the virus may cause

corrupted or corrupted files that can be read with a disk repair software utility.

What can be done for the Michelangelo virus, the CVIA says to reset or load the system only from the hard disk, and reset a floppy disk. Of course, if the hard disk is already infected that won't do much good. If a user is using only floppy disks, the best disks should be virus protected. When a system is reset from an infected floppy and virus protect all bootable disks, the CVIA says.

To get rid of the Michelangelo virus on an infected system, a hardware store high-level format of the hard disk drive is required. The CVIA recommends backup of all user data on the hard disk. If the disk was partitioned, it will have to be re-partitioned. An alternate method is to use a virus detection and its infection package and the CVIA.

Viruses should not be left unchecked, but the Michelangelo virus is supposed to be a computer file is to change the system date to a date before or after March 6 using the DOS DATE command, and change the date back to current date March 6. This will in fact prevent activation of the virus, but not to spread.

Several virus detection and prevention programs are commercially available. They can detect a non-infected system, and some can prevent programs from loading into RAM and "locking" for the user's security.

Contact: Computer Virus Information Association, 10000 1st Ave. N., Suite 100, Seattle, WA 98107. Phone: (206) 461-1000. Fax: (206) 461-1001. E-mail: cvia@netnet.com. Website: <http://www.cvia.com>. Address: 10000 1st Ave. N., Suite 100, Seattle, WA 98107. Phone: (206) 461-1000. Fax: (206) 461-1001. E-mail: cvia@netnet.com.

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